



ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: 177

DATE: Tuesday, January 23rd, 1990

BEFORE: M.I. JEFFERY, Q.C., Chairman

E. MARTEL, Member

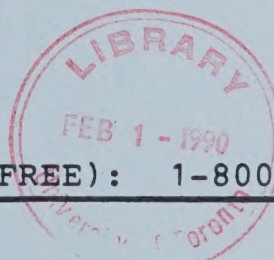
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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -


IN THE MATTER OF a Notice by the
Honourable Jim Bradley, Minister of the
Environment, requiring the Environmental
Assessment Board to hold a hearing with
respect to a Class Environmental
Assessment (No. NR-AA-30) of an
undertaking by the Ministry of Natural
Resources for the activity of timber
management on Crown Lands in Ontario.

Hearing held at the Ramada Prince Arthur
Hotel, 17 North Cumberland St., Thunder
Bay, Ontario, on Tuesday, January 23rd,
1990, commencing at 9:30 a.m.

VOLUME 177

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member



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1 ---Upon commencing at 9:35 a.m.

2 THE CHAIRMAN: Good morning. Be seated,
3 please.

4 Ready, Ms. Seaborn?

5 MS. SEABORN: Thank you, Mr. Chairman.

6 Mr. Chairman, I don't believe the Board
7 will need any extra exhibits in front of it. I take it
8 you have the Class EA with you?

9 THE CHAIRMAN: Yes, and a copy of the
10 Act.

11 MS. SEABORN: Mr. Chairman, I only have a
12 few questions for the witnesses regarding this panel.
13 Before I ask the questions, I want to advise the Board
14 that the Minister of the Environment did not take issue
15 in the government review with MNR's description and
16 evaluation of the 'alternatives to' the undertaking.

17 I note that since preparation of the
18 review there has been a considerable amount of new
19 evidence filed and, with respect to this panel, MNR has
20 elaborated on the alternative, harvest without renewal,
21 and the Board now has before it harvest without renewal
22 with application of the guidelines and harvest without
23 renewal without application of the guidelines.

24 As I understand the evidence, both those
25 alternatives have been rejected by MNR in favour of the

1 preferred alternative, timber management, and MOE's
2 position in the hearing has been that we support timber
3 management with the use of the guidelines.

4 We agree with MNR's conclusion at page 28
5 of the Class EA that the environmental implications of
6 harvest without renewal are unacceptable and, in that
7 regard, I would like to ask Mr. Bisschop a couple of
8 questions.

9 And if you could turn to page 28, and
10 this is in the body of the Class EA rather than the
11 executive summary.

12 THE CHAIRMAN: Is that the table?

13 MS. SEABORN: Yes, Table 7.2-1.

14 JOHN ALLIN,
15 KENNETH ARMSON,
16 DAVID EULER,
17 ALBERT BISSCHOP,
CAMERON CLARK,
JOHN DUNCANSON, Resumed

18 CROSS-EXAMINATION BY MS. SEABORN:

19 Q. Do you have that in front of you, Mr.
20 Bisschop?

21 MR. BISSCHOP: A. Yes, I have it.

22 Q. I note that the last item under
23 Criteria is stated as environmental implications, and
24 then as you go along the bottom column there is an
25 entry in the bottom right-hand box that says

1 unacceptable and that's with respect to harvest with no
2 renewal; is that correct?

3 A. That's right.

4 Q. Now, just a question of
5 clarification. If you look at the Panel 17 evidence
6 and in particular Document 1. Starting at page 34 of
7 the evidence, Chapter 3 is entitled: Natural
8 Environment, Consequences of Alternatives.

9 Now, could you confirm for me that the
10 unacceptable environmental implications that led you to
11 reject harvest without renewal as a preferred
12 alternative are those described in Chapter 3 of
13 Document 1 of the witness statement?

14 A. If I could have a moment, please.
15 Yes, that discussion under environmental implications
16 in the Class EA corresponds to Chapter 3 and Chapter 3
17 only of the statement of evidence.

18 Q. And does anyone on the panel disagree
19 with that statement by Mr. Bisschop? I just want to be
20 clear on it.

21 (no response)

22 I take it silence means that there is no
23 disagreement. I see Mr. Clark nodding, so I will take
24 that as on behalf of everyone.

25 And with respect to the unacceptable

1 environmental implications and what Mr. Bisschop has
2 told me about Chapter 3, is there anything that anyone
3 would like to add to what is contained in Chapter 3?

4 A. Exactly what are you getting at?
5 Like, in terms of that subject, the three witnesses who
6 dealt with that are Mr. Armson, Dr. Euler and Dr. Allin
7 and if you want to ask them that specific question I
8 guess they could respond.

9 Q. Okay. Dr. Allin?

10 DR. ALLIN: A. Well, nothing occurs to
11 me offhand.

12 Q. Dr. Euler?

13 DR. EULER: A. The basic concepts I
14 would not change. I can think of some better ways of
15 wording some of those things and if I had to do over, I
16 assure you I would change some words and I would have
17 done a few editorial things to make them just a little
18 more clear.

19 Q. I am not concerned about editorial
20 changes.

21 A. Okay. But, yes, the basic theme of
22 what we've said is the same.

23 Q. Mr. Armson?

24 MR. ARMSON: A. Similarly, it could be
25 elaborated on to a much greater degree, but the essence

1 is there.

2 Q. Thank you. Dr. Allin, I have a
3 couple of questions for you. As I understand your
4 evidence, one of the facts that led you to the
5 conclusion that the null alternative ranked No. 3 or
6 had a higher negative impact than timber management or
7 alternative B was that under the null alternative
8 relatively few roads would be maintained; is that
9 correct?

10 DR. ALLIN: A. Under alternative A,
11 relatively few roads would be maintained, yes.

12 Q. And I believe Mr. Colborne touched on
13 this briefly yesterday, and in your evidence-in-chief
14 you said that under the do-nothing or null alternative
15 most culverts would wash out resulting in significant
16 erosion and sedimentation; is that correct?

17 A. Yes.

18 Q. And in the witness statement - I
19 don't think it is necessary to go to it - at page 84
20 you stated that under the do-nothing alternative the
21 impact would be high considering the high potential for
22 erosion from abandoned roads?

23 A. Yes.

24 Q. Now, would you agree with me that if
25 under timber management culverts were not removed on

1 abandoned roads, the environmental impacts would be the
2 same as the ones you have identified in your analysis
3 of the null alternative?

4 A. No, I don't think they would be. I
5 tried in evidence-in-chief to explain some of the
6 differences with respect to road maintenance and
7 abandonment between timber management and alternative
8 A, and I think that there are some differences that are
9 significant in determining the impact with respect to
10 erosion.

11 Q. In a situation of abandonment, we are
12 talking about roads that are not maintained; correct?

13 A. Yes.

14 Q. Okay. And what I'm suggesting is
15 that in your analysis of the do-nothing alternative you
16 talked about the negative impacts of road abandonment,
17 and what I'm suggesting is that under timber management
18 on abandoned roads, if you don't go in and remove
19 culverts or water crossings, those environmental
20 impacts would be exactly the same. I don't see where
21 the distinction would be.

22 A. Well, I don't think they would be the
23 same. There are a number of differences.

24 Q. But how would they be different if
25 you are not maintaining those roads under either of

1 those, under the preferred alternative or under the
2 do-nothing alternative?

3 A. Well, in a number of ways. For one
4 thing, under timber management we do maintain primary
5 roads.

6 Q. No, I'm limiting it to abandoned
7 roads which, by their very definition, are not
8 maintained.

9 A. Okay. But I guess what I'm saying is
10 that those roads as being abandoned under timber
11 management are not primary roads, they are the lower
12 classes of roads.

13 Q. That's right.

14 A. Secondary and tertiary roads
15 particularly.

16 Q. Okay. I can restrict my question to
17 those two kinds of roads in terms of the comparison
18 between do nothing and timber management.

19 A. Well, but I think the fact that we do
20 not abandon primary roads is a significant factor
21 because primary roads involve the most soil
22 disturbance, there is more cutting and filling, there
23 are thicker surfaces on those roads, there is more
24 potential for erosional impacts.

25 Q. I understand that, and I am not

1 looking at it -- my question isn't in terms of
2 comparing now the two alternatives; my question is in
3 terms of the environmental impacts, and let's restrict
4 it to secondary and tertiary roads.

5 If under the do-nothing alternative --
6 under the do-nothing alternative you have listed a
7 variety of environmental consequences on secondary and
8 tertiary roads, and what I am suggesting is that if you
9 do nothing under timber management, those environmental
10 effects with respect to erosion and sedimentation would
11 be exactly the same?

12 A. No, I can't agree.

13 Q. How would they be different with
14 respect to those two kinds of roads then?

15 A. Well, with secondary roads, for
16 example, under timber management, we do maintain them
17 for a number of years before they are abandoned and
18 which of course would not be true under alternative A.

19 So the fact that we maintain them for --
20 well, it varies, but let's say 15 or 20 years, through
21 the period of harvest, renewal and some maintenance
22 activities, we would be going back in in many cases
23 some years after that in order to carry out another
24 harvest.

25 So essentially we would be going back

1 into those roads under timber management from time to
2 time, rejuvenating them where necessary, maintaining
3 them in some cases. None of that would happen under
4 alternative A, so there is a difference there.

5 There is a difference also in the sense
6 that under timber management we do physically abandon
7 some roads in the sense that we make them impassable
8 and we take steps to prevent erosion problems by
9 removing the water crossing structure or whatever. And
10 for those roads that we naturally abandon, we inspect
11 them regularly and we repair serious problems to the
12 extent that we are able to do so.

13 So all of those things are different than
14 what would happen under alternative A with the
15 assumptions that we are making.

16 Q. Okay. Let me go back to the first
17 thing you said with respect to a secondary road. As I
18 understood the analysis of the do-nothing alternative,
19 it was based on the premise that you have a number of
20 roads out there that have been constructed over the
21 years and as of this point in time you do nothing.

22 So to me that can be an exact parallel to
23 timber management where you have a timber road and you
24 do nothing on that road; isn't that true?

25 One of your qualifiers was that: Oh, in

1 timber management we go in and -- we may go in and do
2 something -- I'm sorry, under timber management you
3 said we would maintain these roads over a number of
4 years before we abandon them.

5 A. Right.

6 Q. What I'm suggesting is that the
7 premise that you put before the Board with respect to
8 the do-nothing approach is that you have a road network
9 out there. Now, up until the point in time that you do
10 nothing, the roads are there, you have been maintaining
11 them up to that same point in time, so I don't
12 understand the distinction then in terms of
13 environmental implications?

14 A. Well, I guess we see that under
15 alternative A there is a difference in terms of just
16 absolute numbers of crossings that would wash out. I
17 mean, we maintain something like 20,000 kilometres of
18 roads each year. If you were to suddenly walk away
19 from those, certainly those crossings that were not
20 well stabilized; in other words, those that had been
21 built in the last perhaps 10 years, would be quite
22 susceptible to washout.

23 So in terms of absolute numbers, we think
24 there would be a very large number of washouts that
25 would happen in that period of time.

1 Q. Dr. Allin, let me try and come at it
2 this way. Let's deal with one road. You have got a
3 road out there, under the do-nothing alternative you
4 walk away from it, there is no more timber management.

5 Under the preferred alternative, timber
6 management, you do nothing as well, it is an abandoned
7 road and suppose, for example. In that case you don't
8 go in and remove a water crossing, aren't the
9 environmental impacts associated with erosion and
10 sedimentation exactly the same with respect to that one
11 road?

12 A. So you're assuming it's a naturally
13 abandoned road--

14 Q. Sure.

15 A. --under timber management?

16 Q. --as an example. Take a naturally
17 abandoned road. To me it would make no difference for
18 physical abandonment because you are just putting up a
19 barrier or ditching a road, there is no maintenance
20 under abandonment?

21 A. No, but we in many cases would be
22 removing a crossing structure--

23 Q. That's fine.

24 A. --or helping to prevent future
25 erosion.

1 Q. Okay, I understand. I'm talking
2 about the situation under timber management where you
3 don't do that, you do nothing the same way as you do
4 nothing under the null alternative. Aren't the
5 environmental consequences exactly the same for that
6 one road?

7 A. I'm not sure that we don't -- I'm not
8 sure that we do nothing in those situations because
9 even in a natural abandonment --

10 Q. I am saying as a hypothetical, you do
11 nothing under timber management. I understand your
12 evidence is that in a majority of cases you do do
13 something; I'm talking about the cases where under
14 timber management you do nothing, and all I'm
15 suggesting - it is quite a simple proposition - all I
16 am suggesting is that the environmental implications of
17 that doing nothing under timber management would have
18 to exactly parallel those under the do-nothing
19 alternative?

20 MS. BLASTORAH: Well, Mr. Chairman, I
21 have some problem with the question because, as I hear
22 it, Ms. Seaborn is putting a hypothetical to Dr. Allin
23 that he has said -- that she is characterizing as doing
24 nothing under timber management, and he has indicated
25 to my hearing a couple of times that you don't do

1 nothing under timber management, you do things like
2 road inspections and repairs where there are problems
3 and you can do them and so on.

4 And I have some problem with her
5 continuing to insist that he respond to a hypothetical
6 which he has characterized is not timber management.
7 And my problem is that she is putting in the context of
8 timber management. If she wants to ask it outside of
9 that context, I don't have a problem with the question.

10 MS. SEABORN: And I'm suggesting, Mr.
11 Chairman, that in Panel 14 it was not the evidence of
12 MNR that on every single abandoned road they do
13 something, and all I am doing is trying to draw the
14 parallel between abandoned roads where MNR does
15 nothing, and to me it is quite simple.

16 THE CHAIRMAN: Okay. Well --

17 MS. SEABORN: I am not suggesting that
18 MNR doesn't do anything on abandoned roads under timber
19 management.

20 THE CHAIRMAN: Okay. Well, Dr. Allin,
21 let's just assume for the purpose of the question that
22 if you did nothing whatsoever on an abandoned road, it
23 was after harvest, you decided to abandon it, you left,
24 you did absolutely nothing thereafter. Let's just
25 assume that that did in fact occur.

1 I think Ms. Seaborn is putting forward
2 the proposition: Would not the environmental impacts
3 be identical to the situation of alternative A in that
4 specific case, even though as we understand it, you
5 don't agree in 99 per cent of the cases that's what
6 occurs under timber management?

7 DR. ALLIN: All right. Given those
8 assumptions, I think the impacts would be identical in
9 some situations, but not in others.

10 If you're talking about a situation in
11 which the crossing structure is well stabilized in
12 either situation, under either timber management or
13 alternative A, then if a washout occurs, I agree the
14 impact would be similar.

15 However, there are situations - and I
16 would submit a fair number of them - in which under
17 alternative A if you were to walk away from the road
18 system and do nothing, many of the existing water
19 crossings would not be in that stable condition, so
20 that I would suggest the erosional impact of that would
21 be quite significant. There would be an awful lot of
22 material available to a road typically.

23 On the other hand, with timber
24 management, as I've indicated, we do maintain roads for
25 a certain period of time, let's say 15 or 20 years, and

1 that carries us past the period of the highest risk of
2 impact, both in terms of an actual washout occurring
3 because the longer the site has to stabilize the less
4 risk there is of a washout, but also in terms of the
5 impact of a washout when it in fact does occur or if it
6 does occur because the more stable the structure the
7 less erosional impact there will probably be given that
8 revegetation of that structure through a root network
9 will help to stabilize the site, so that certainly with
10 some washouts you would expect to have less material
11 eroding.

12 THE CHAIRMAN: Ms. Seaborn, I think
13 that's all you are going to get out of him.

14 MS. SEABORN: I think I probably made the
15 point, Mr. Chairman. You characterized the question
16 for me very nicely.

17 MS. BLASTORAH: Mr. Chairman, I do have
18 one remaining comment that I feel I must make, which
19 is: Ms. Seaborn indicated that she felt the evidence
20 of Panel 14 indicated that there are situations where
21 the Ministry does nothing on abandoned roads.

22 And I invite her to correct me if I'm
23 wrong, that's what I heard her to say, and I would
24 simply state that that was not my understanding of the
25 evidence in Panel 14 in light of Dr. Allin's comments.

1 If I am wrong, I apologize. I may have misheard her.

2 MS. SEABORN: Well, I think we will
3 probably argue about it later on, Mr. Chairman, but if
4 it is the Ministry's position that they are going to go
5 in and remove every culvert under the preferred
6 alternative, then I am very happy and I don't need to
7 worry about this area, but I don't believe that was
8 where things were left.

9 MS. BLASTORAH: Mr. Chairman, I certainly
10 don't intend to argue here, but that's not what I meant
11 to imply.

12 MS. SEABORN: And, again, my questions
13 were based on the situations where you don't go in and
14 do that. It was a very simple proposition.

15 THE CHAIRMAN: Okay. Let's move on to
16 another issue.

17 MS. SEABORN: Well, Mr. Chairman, I'm
18 happy to say that 17 panels later I think I have
19 completed my cross-examination of the Ministry
20 witnesses, subject to the evidence that we are going to
21 hear on the new panel.

22 Thank you, Members of the Panel.

23 THE CHAIRMAN: Thank you.

24 MS. BLASTORAH: Mr. Chairman, I assume
25 that we are done except for re-examination, and I can

1 advise that I anticipate I won't be more than about 20
2 minutes with that.

3 I would ask the Board's indulgence for
4 perhaps 10 minutes just to review my notes of this
5 morning's cross-examination to see if I have questions
6 arising from it.

7 THE CHAIRMAN: Very well. So we will
8 break now for 10 minutes.

9 MS. BLASTORAH: Ten minutes should be
10 sufficient, Mr. Chairman.

11 THE CHAIRMAN: Okay.

12 ---Recess taken at 10:00 a.m.

13 ---On resuming at 10:15 a.m.

14 THE CHAIRMAN: Thank you. Be seated,
15 please.

16 MS. BLASTORAH: Mr. Chairman, I just
17 advised Ms. Devaul that I expect I will be 10 to 15
18 minutes on re-examination, and Ms. Murphy has requested
19 about half an hour to finish setting up the material
20 for Panel 15 and to collect her witnesses and get them
21 here -- or not Panel 15, Panels 10B and 15B, I guess it
22 is. So I would ask your indulgence in that regard.

23 THE CHAIRMAN: All right. With respect
24 to the rest of the schedule, we have been looking at
25 the times and some commitments we have. We would like

1 to leave here tomorrow at the same regular time.

2 Now, in the event that you aren't
3 finished with your re-examination of this panel, we are
4 suggesting that what remains, which may be an hour, be
5 done in Toronto on Wednesday morning at the outset just
6 prior to coming to the motion. It may require --

7 MS. BLASTORAH: Is that re-examination,
8 Mr. Chairman, on the clearcut and AOC material?

9 THE CHAIRMAN: Yes, right. If necessary,
10 if in fact we don't finish tomorrow. We may well
11 finish tomorrow. We are prepared to sit long hours to
12 accomplish that and start early, but we have to be out
13 of here, in any event, tomorrow afternoon and to stay
14 the extra hour here to finish off means one of our
15 members has to wait in an airport for four and a half
16 hours, which we don't think is such a good idea and,
17 consequently, we feel that if there is an hour to go on
18 the re-examination, it could be done the following week
19 in Toronto.

20 MR. FREIDIN: Well, let's wait until
21 tomorrow, Mr. Chairman, and we will probably discuss it
22 then to see whether it is necessary. We can canvass
23 the availability of our witnesses as well.

24 THE CHAIRMAN: Okay. You have got four
25 of your witnesses in any event that are from Toronto.

1 MR. FREIDIN: There is all kinds of
2 factors that may come into play, Mr. Chairman. I think
3 it is difficult to really discuss it and make any final
4 decision until tomorrow.

5 THE CHAIRMAN: Okay. Well, we are not
6 making any final decision but we are giving you a
7 fairly clear indication of what the Board's intentions
8 are.

9 Go ahead, Ms. Blastorah.

10 MS. BLASTORAH: Mr. Chairman, I have very
11 few questions, as I've indicated. My first one is for
12 Dr. Allin.

13 RE-EXAMINATION BY MS. BLASTORAH:

14 Q. Dr. Allin, in answering questions
15 about water yield increases - and I'm afraid I didn't
16 make a note of who asked you those questions, I believe
17 it may have been Mr. Lindgren - you referred to two
18 studies which were conducted in the experimental lakes
19 areas.

20 Can you advise where that experimental
21 lakes area is located roughly?

22 DR. ALLIN: A. Yes, it is in
23 northwestern Ontario, essentially between Dryden and
24 Kenora.

25 Q. So that would be within the area of

1 the undertaking?

2 A. Yes, it would.

3 Q. Thank you. Dr. Euler, Mr. Lindgren
4 asked you - and I have a transcript page reference, Mr.
5 Chairman, 31088 - Mr. Lindgren asked whether you have
6 an acceptable level of baseline data from which to
7 proceed to make comparisons with regard to the
8 alternatives; do you recall that?

9 DR. EULER: A. Yes.

10 Q. And you indicated that you do not
11 have as much background baseline data as you should
12 have as a management agency. Notwithstanding your
13 opinion that you should have more baseline data as a
14 management agency, in your opinion, did you have enough
15 baseline data to make a valid comparison of the
16 alternatives?

17 A. The reason I'm thinking about that
18 is, is because of some confusion over what you might
19 call baseline data.

20 You see, if you think in the context that
21 Mr. Lindgren was talking about when he was talking
22 about baseline data, what sprang to my mind in that
23 context was a program of collecting data in Ontario on
24 the various species of wildlife. Well, we don't have
25 that kind of backlog of data.

1 Now, what we need to make these judgments
2 that we made in our Panel 17 evidence isn't so much
3 background data as it is a general knowledge of the
4 ecology of the animal species in the forests of
5 Ontario. And, yes, I am confident that we have that
6 knowledge and we could make those judgments and those
7 judgments are as good as any person could possibly make
8 based on a whole series of ecological knowledge of the
9 animals in question.

10 So that may be just a little different
11 than background data, depending on how you define that
12 term. And that's where some confusion arises over the
13 difference between collecting background data and
14 having an understanding of the ecology of wildlife
15 species in question.

16 Q. So I can take it then that
17 notwithstanding those comments you do believe your
18 comparison of the alternatives was valid?

19 A. Oh, indeed I do, and I think that's
20 based on a lot of knowledge in the ecological
21 literature both from Ontario and from outside of
22 Ontario. I think that's true, yes.

23 Q. Thank you. Mr. Bisschop, my next
24 question is for you. Yesterday Mr. Hanna described a
25 number of things which would, he felt, be functionally

1 different from producing virgin wood fiber and one of
2 the things he referred to in that context was demand
3 management. Do you recall that exchange?

4 MR. BISSCHOP: A. Yes, I recall that.

5 Q. Okay. In responding to his
6 questions, what did you understand him to mean by
7 demand management?

8 A. I understood that to mean management
9 by either - sorry, I should backtrack. I understood
10 that to be management of the requirements for whatever
11 materials to supply the industry from the production of
12 products; in other words, management of the roundwood
13 supplies versus supplies that might be available
14 through chips or sawdust material, that sort of
15 management of raw material supply.

16 Q. So when you say the industry in that
17 context, can I take it you mean the forest products
18 industry?

19 A. Yes.

20 Q. Thank you. Mr. Armson, you had an
21 exchange yesterday with Mr. Hanna in which you
22 indicated that free to grow assessments would not be
23 carried out and the forest resources inventory would
24 not be updated under alternatives B and C. Do you
25 recall that?

1 MR. ARMSON: A. Yes, I do.

2 Q. Assuming that the FRI was updated and
3 free to grow assessments were carried out under those
4 two alternatives, B and C, would that affect your
5 ranking under those alternatives in relation to timber
6 management?

7 A. No.

8 Q. Thank you. Again for you, Mr.
9 Armson. During cross-examination by Mr. Lindgren, he
10 asked whether you had considered air quality effects in
11 ranking the various alternatives to achieving the
12 purpose of the undertaking, and I believe he asked you
13 specifically whether you had considered the effect of
14 smoke on air quality.

15 Can you advise whether there would be
16 more smoke produced under one alternative than under
17 another?

18 A. Yes, and this would go back to the
19 evidence concerning the number and particularly the
20 intensity and extent of fire. So under alternative A,
21 which was the one, there would in fact be much larger
22 fires and, therefore, far more smoke and "air
23 pollution".

24 Q. Thank you. Mr. Clark, during
25 questioning by Ms. Kler yesterday you indicated that

1 one of the assumptions in ranking the alternatives was
2 that the heritage guidelines would be developed and
3 used. Assuming that there were no heritage guidelines
4 in place, would your ranking of the alternatives have
5 been any different?

6 MR. CLARK: A. No, it wouldn't have
7 been.

8 Q. Why do you say that?

9 A. Well, you know, I explained yesterday
10 in my evidence, we are already involved in a process
11 whereby we consult with parties that have knowledge of
12 sites and we consult with people who have expertise
13 both in and outside of government on how to deal with
14 those sites.

15 Q. Thank you. Mr. Duncanson, my last
16 few questions are for you. At page 31017 of the
17 transcript, you indicated - I don't think it's
18 necessary to refer to that - you indicated in response
19 to a question from Mr. Lindgren that you expected that
20 the importation of primary wood products into Ontario
21 would remain static or decrease in future. Why did you
22 say that?

23 MR. DUNCANSON: A. Sorry, can you
24 repeat...

25 Q. I'm sorry. You indicated in response

1 to a question from Mr. Lindgren, and he was asking you
2 a series of questions in relation to imports and
3 exports from Canada of roundwood--

4 A. Okay.

5 Q. --and primary wood products, and you
6 indicated that you expected that the importation of
7 primary wood products into Ontario would remain static
8 or decrease in future.

9 And if it would be of assistance to you,
10 I believe he was referring to Exhibit 1002 which is an
11 excerpt from Selected Forestry Statistics, Canada 1986.

12 The first column on the left is headed
13 Primary Wood Products, and this is on page 83 of that
14 exhibit, and there are two subjects under that,
15 roundwood and woodchips. I believe it was specifically
16 the roundwood portion of that column that he was
17 referring to.

18 A. The majority, as I indicated to Mr.
19 Lindgren, of the statistics - and these are for Canada
20 as a whole - are basically that the major product
21 imported is roundwood into Canada as opposed to chips
22 or lumber or other products.

23 It is my feeling that pressures from
24 other juris -- from states in the United States, is
25 where most of the imports are coming from. The

1 pressures from those jurisdictions on restricting
2 exports of raw material are just as great as they are
3 in this country. So that's why I stated that I felt
4 that the amount of roundwood would probably decrease
5 over the next few years.

6 Q. Thank you. On a related matter, and
7 again this refers to the same exhibit, Mr. Lindgren put
8 some figures from the Ministry's stats, 1986 stats --
9 or I beg your pardon, this is the Federal Selected
10 Forestry Statistics, Exhibit 1002, and he put some
11 figures to you with regard to roundwood imports to
12 Canada. This is again the column I've just referred to
13 on page 83 of that exhibit.

14 Can you advise whether those figures
15 would include imports of exotic species of the type
16 referred to by the Chairman and Mr. Martel during that
17 series of questioning? I believe Mr. Martel referred
18 to mahogany, an exotic species like that.

19 A. Yes. I think lumped under the other
20 wood products would be most of your hardwoods and
21 coming in from Africa and South America, those would be
22 sort of your more exotic hardwoods that are used in the
23 furniture and marine trades.

24 Q. I beg your pardon. This is under the
25 heading Wood Fabricated Materials, under that column?

1 A. Yes, under the Other Wood Product
2 side.

3 Q. Would the imports of those exotic
4 species be exclusively lumber or is any roundwood of
5 those species imported?

6 A. No, they break all the roundwood out
7 on the left-hand side.

8 Q. So my question then I think remains:
9 Any roundwood of those exotic species imported would be
10 included under that left-hand column, roundwood?

11 A. Well, as you can see, there aren't
12 any. We don't import roundwood logs into the country
13 from my knowledge. As you can see, it's blank.

14 Q. Oh, I see what you are saying.

15 A. Almost all of the teak and mahogany
16 comes in squared.

17 Q. Thank you. And my last question, Mr.
18 Duncanson, is for you. Mr. Hanna asked you a number of
19 questions with regard to means by which the government
20 could effect the amount of recycled paper used by
21 industry.

22 In response to the suggestion that
23 government could legislate the minimum amount of
24 recycled content to be used by a mill, you responded
25 that theoretically that might be possible but - and I

1 believe your words were - you wouldn't have much of a
2 paper industry left. Could you explain what you mean
3 by that comment?

4 A. Well, I don't want to go over my
5 entire presentation, but I guess it's the fact that,
6 you know, recycled paper or waste paper as a raw
7 material is going to become less predictable and less
8 continuous of a supply.

9 And the justification for building a
10 major mill, based on particularly northern Ontario, as
11 I indicated in my evidence, most of the waste paper for
12 that would be coming from outside the area of the
13 undertaking and quite a bit of it will be coming in
14 from the United States.

15 And most of the mills I think are
16 reluctant to -- would be reluctant in a free market to
17 put in capacity that we don't utilize as supply, and I
18 don't think their reaction to being legislated would
19 be -- you know, would be a popular move. They would
20 not do that.

21 I don't think you can force people to
22 create a product out of a raw material that is not in
23 the control of that same legislative body. If the
24 Ministry of Natural Resources wanted to invest hundreds
25 of millions of dollars in collection systems in the

1 States, then I think you have got a different -- you
2 know, you have got a two-sided event here.

3 MS. BLASTORAH: Those are my questions,
4 Mr. Chairman.

5 THE CHAIRMAN: Thank you.

6 MS. BLASTORAH: And the end of the last
7 official panel.

8 Thank you, Panel Members.

9 THE CHAIRMAN: Thank you. Well, Panel, I
10 think we can proceed I guess. We are going to take a--

11 MR. FREIDIN: At least a half an hour.

12 THE CHAIRMAN: --half hour break at this
13 time in order to set up, and then we will return for
14 the material on clearcut.

15 I take it the panel is through at this
16 point, so thank you. And no doubt we will all meet
17 again.

18 --- (Panel withdraws)

19 --- Recess taken at 10:35 a.m.

20 --- On resuming at 11:10 a.m.

21 THE CHAIRMAN: Thank you. Be seated,
22 please.

23 I think we have to swear Dr. Abraham.

24 MS. MURPHY: That's right. We have one
25 witness to be sworn.

1 ALBERT BISSCHOP,
2 JOHN McNICOL,
3 RICHARD GREENWOOD,
 FRANK KENNEDY, Recalled
 KENNETH F. ABRAHAM, Sworn

4 MS. MURPHY: As you know, all of the
5 other witnesses have been sworn and previously
6 qualified. Dr. Abraham is a wildlife biologist with
7 expertise in wildlife management and in research with
8 respect to wildlife habitat needs, and we ask that he
9 be so qualified.

10 THE CHAIRMAN: Very well.

11 MS. MURPHY: Now, Mr. Chairman, there is
12 a large number of exhibits to be filed at the
13 commencement of this panel, and what I have done is
14 prepared an exhibit list which I think should help us
15 to identify a number of those exhibits.

16 So perhaps I will just give you that
17 first. (handed)

18 THE CHAIRMAN: I believe we are up to
19 Exhibit 1008.

20 MS. MURPHY: Fine. Then the first one --
21 would this be 1008 or 1009, Mr. Chairman?

22 THE CHAIRMAN: 1008.

23 MS. MURPHY: 1008 then is the statement
24 of evidence for Panel 10B, the Clearcut Exercise.
25 (handed)

1 ---EXHIBIT NO. 1008: Witness Statement for Panel 10B.

2 MS. MURPHY: The next document I have,
3 Exhibit 1009, is simply a short outline of the evidence
4 of this panel that will enable you to follow through
5 the evidence as the panel provides their
6 evidence-in-chief. (handed)

7 THE CHAIRMAN: 1009.

8 ---EXHIBIT NO. 1009: Document entitled: Clearcut
9 Exercise, Outline of
 Evidence.

10 MS. MURPHY: As Exhibit 1010 then, I
11 provide hard copy of the photographs that are contained
12 in the statement of evidence. (handed)

13 THE CHAIRMAN: 1010.

14 ---EXHIBIT NO. 1010: Hard copy of photographs
15 contained in statement of
 evidence for Panel 10B.

16 MS. MURPHY: For Exhibit 1011, I have a
17 set of overheads. I have page numbers 1 to 6, and
18 these are overheads to be used in the evidence of
19 Messrs. Kennedy and Greenwood. (handed)

20 ---EXHIBIT NO. 1011: Overheads re: Evidence of
21 Messrs. Kennedy and Greenwood.

22 MS. MURPHY: The next document which I
23 have listed as Clearcut Exercise, Notes by Management
24 Unit. We developed a short form to use to provide some
25 of the information that relates to each management unit

1 and we thought it would be easier for you to keep notes
2 if you had a form that gave you that general
3 information.

4 So Clearcut Exercise, Notes by Management
5 Unit, and I have given them page numbers 1 to 9.

6 THE CHAIRMAN: Make that all the same
7 exhibit though?

8 MS. MURPHY: Yes. (handed)

9 THE CHAIRMAN: 1012.

10 ---EXHIBIT NO. 1012: Document entitled: Clearcut
11 Exercise: Notes by Management
Unit.

12 MS. MURPHY: The next document I have,
13 Exhibit 1013, I would describe as the back cover of
14 "Seasons" Magazine, December 1989, and attached to that
15 document are some pages from the transcript of
16 evidence, Volume 86, pages 14480-14485. (handed).

17 ---EXHIBIT NO. 1013: Back cover of Seasons Magazine,
18 December, 1989 (with transcript
19 of evidence, Volume 86, pages
14480-14485 attached).

20 MS. MURPHY: Okay. Now, Mr. Chairman, I
21 am sure you will appreciate there are a large number of
22 maps that were prepared in conjunction with the
23 clearcut exercise and I have listed them on this
24 document.

25 I would suggest that they be marked for

1 the record in the following way: That the series of
2 maps -- each one has the same kind of series of maps,
3 each one has one called Key Map, Map 1, Map 2 and Map
4 3.

5 I would suggest that we take, for
6 example, the first one, Gordon Cosens FMA and call that
7 set Exhibit 1014, and then call them 1014A would always
8 be the Key Map, B would always be Map 1, C would always
9 be Map 2, D would always be Map 3.

10 THE CHAIRMAN: Very well, we will do in
11 it in that fashion.

12 ---EXHIBIT NO. 1014: Series of maps A-D re: Gordon
13 Cosens FMA (Kapuskasings District).

14 ---EXHIBIT NO. 1015: Series of maps A-D re:
15 Kapuskasing Crown Management Unit (Kapuskasings District).

16 ---EXHIBIT NO. 1016: Series of maps A-D re: White
17 River FMA (Wawa District).

18 ---EXHIBIT NO. 1017: Series of maps A-D re: Wawa Crown
Management Unit (Wawa District).

19 ---EXHIBIT NO. 1018: Series of maps A-D re: Dog
20 River/Matawin FMA (Thunder Bay District).

21 ---EXHIBIT NO. 1019: Series of maps A-D re: Fort
22 William Crown Management Unit (Thunder Bay District).

23 ---EXHIBIT NO. 1020: Series of maps A-D re: Domtar
24 Armstrong Company Management Unit (Nipigon District).

25 ---EXHIBIT NO. 1021: Series of maps A-D re: Red Lake

1 Crown Management Unit (Red Lake
2 District).

3 ---EXHIBIT NO. 1022: Series of maps A-D re: English
4 River FMA (Ignace District).

5 MR. CASSIDY: Is it the Ministry's
6 intention, Mr. Chairman - I believe this question is
7 for you as well - to keep these maps in the reading
8 room?

9 MS. MURPHY: Yes.

10 MR. CASSIDY: Thank you.

11 MS. MURPHY: There is a set of these maps
12 in the reading room. What we will undertake to do as
13 well, once the evidence is complete, is mark those
14 maps, that will take a little time, with the exhibit
15 numbers. But I think this will assist us in
16 identification.

17 I get the last one, English River, as
18 being 1022.

19 THE CHAIRMAN: I am not there yet. I
20 soon will be.

21 MS. MURPHY: Oh, sorry.

22 THE CHAIRMAN: Okay. Exhibit 1022 is the
23 last one, English River FMA.

24 MS. MURPHY: Thank you.

25 There are four other documents that
relate to the Dog River/Matawin area that will be

1 marked as exhibits, and perhaps Mr. Kennedy can just
2 help me for a minute, but I would like to do is just
3 point them out to you at this point.

4 The next exhibit then, Exhibit 1023, the
5 Dog River/Matawin contiguous cut, this is a
6 photomosaic, and the photography was taken last month,
7 December, 1989.

8 ---EXHIBIT NO. 1023: Dog River/Matawin Contiguous
9 Cut - photomosaic (December,
1989).

10 MS. MURPHY: The next one, Exhibit 1024,
11 this is the International Falls - Quetico - Ignace area
12 interpreted Landsat Imagery and that interpretation was
13 done April, 1988.

14 THE CHAIRMAN: Exhibit 1024.

15 ---EXHIBIT NO. 1024: International Falls - Quetico -
16 Ignace: Interpreted Landsat
Imagery (April, 1988).

17 MS. MURPHY: The next one, Exhibit 1025,
18 this again is Dog River/Matawin area. This is an
19 age-class map. It was produced with information from
20 1988 but produced on request of our witnesses by
21 Canadian Pacific Forest Products this month. So Dog
22 River/Matawin age-class map.

23 ---EXHIBIT NO. 1025: Dog River/Matawin: age-class
24 maps (1988); FMA No. 502400
Canadian Pacific Forest Products.

25 MS. MURPHY: The next one, Exhibit 1026,

1 again the Dog River/Matawin area. The proper name of
2 that is the stand working group distribution map. This
3 is a map of essentially the species in that area
4 produced in essentially the same manner.

5 ---EXHIBIT NO. 1026: Dog River/Matawin: stand working
6 group distribution map (1988),
7 FMA No. 502400 Canadian Pacific
Forest Products.

8 MS. MURPHY: And there are three more
9 exhibits to enter that deal with the evidence of Mr.
10 Bisschop. We might as well enter them all at this
11 stage.

12 The first one then, 1027, is a letter
13 from Victor Freidin to all full-time parties dated
14 December 21st, 1989. (handed).

15 ---EXHIBIT NO. 1027: Letter from V. L. Freidin to all
16 full-time parties, dated December
21, 1989.

17 MS. MURPHY: The next one, 1028, form and
18 instructions re: supplementary documentation for
19 operations in areas of concern, and that set of
20 documentation is dated December, 1989. (handed)

21 ---EXHIBIT NO. 1028: Document entitled Form and
22 Instructions re: supplementary
23 documentation for operations in
areas of concern dated December,
1989.

24 MS. MURPHY: And the last document then,
25 Exhibit 1029, form and instructions re: supplementary

1 documentation for primary and secondary road corridors.

2 And that is again dated December, 1989.

3 ---EXHIBIT NO. 1029: Document entitled Form and
4 Instructions re: supplementary
5 documentation for primary and
secondary road corridors, dated
December, 1989.

6 MS. MURPHY: If you just take out then
7 your Exhibit 1009, the outline of evidence. As you
8 know, this panel will be presenting evidence with
9 respect to the results of an exercise that was
10 undertaken in order to answer an interrogatory from
11 Forests for Tomorrow.

12 The results of the exercise are presented
13 in nine sets of maps that deal with nine specific areas
14 in the boreal forest, and the witnesses will be
15 explaining the mapping exercise that was undertaken and
16 they will be explaining to you that what the mapping
17 exercise does is it provides factual information. The
18 interpretation of the information is left up to the
19 user. These witnesses will be explaining the factors
20 that they believe are important to consider when
21 looking at this information.

22 And if you look at the outline of
23 evidence, what we are proposing to do is the following:
24 Mr. Kennedy will begin by explaining the instructions
25 that were developed by this committee and will, after

1 explaining those instructions, show you the maps that
2 were produced and give you some indication how those
3 maps should be looked at.

4 We are proposing that Mr. Kennedy provide
5 that information while everyone stays in their place
6 and we would also -- once he has finished with that and
7 introduced the maps and explained how they can be
8 looked at, we will also ask Mr. Greenwood to draw your
9 attention to some of the documents he will be referring
10 to, some of the maps he will be referring to and ask
11 you to look at some specific things on those maps. And
12 I believe at least Dr. Abraham has some things he would
13 like you to look at.

14 I would suggest that we go to that point
15 without leaving our seats, and if we can get to that
16 point, then I would suggest we take a break, go off the
17 record, and take the opportunity then to look at the
18 maps rather than try to get up and down and take notes
19 and so forth.

20 That being the case, I think it would be
21 easier for you if you use the exhibit that was provided
22 Clearcut Exercise, Notes by Management Unit, 1012.
23 That will give you an opportunity to note whether you
24 have any questions with respect to specific maps and so
25 forth.

1 Therefore, after the break and after you
2 have had a chance to look at the documentation, you
3 will have an opportunity, the Board would have an
4 opportunity to ask the witnesses questions about those
5 maps, if they had any, and before we go further into
6 the actual discussion.

7 After you have had an opportunity to look
8 at those exhibits then, Mr. Greenwood will describe the
9 management and natural factors that influence post-cut
10 conditions in a clearcut area and he will be giving you
11 examples from the maps and the other documents that are
12 provided here.

13 Mr. McNicol and Dr. Abraham will be
14 talking about the significance of the post-cut
15 conditions in a clearcut area for wildlife managers,
16 again by providing examples and, in particular, looking
17 at one example, the Dog River/Matawin. And they will
18 be showing you some photographs that were taken very
19 recently in that area and give you some notes about
20 that.

21 And then finally Mr. Bisschop will
22 provide his evidence on the area of concern planning
23 process.

24 Now, you will recall, Mr. Chairman, from
25 the scoping exercise I undertook to contact Ms.

1 Swenarchuk about whether we had agreement on the
2 statements of fact, especially paragraphs 1 to 7, and
3 she advises me this morning that she agrees with these
4 statements of fact Nos. 1 to 7, but asks that we add
5 one further comment. And I think it's probably easiest
6 for me to do it this way.

7 DIRECT EXAMINATION BY MS. MURPHY:

8 Q. And, Mr. Kennedy, you personally were
9 involved with every step of this exercise; is that
10 correct?

11 MR. KENNEDY: A. Yes, it is.

12 Q. And you are aware of all the facts
13 that are set out in paragraphs 1 to 7; is that true?

14 A. Yes, I am.

15 Q. Now, Ms. Swenarchuk has asked us to
16 note for the record that at various points during the
17 discussion there was also involvement at various
18 meetings of some of the other parties other than
19 Forests for Tomorrow, Ontario Forest Industry
20 Association, Ministry of the Environment, and the
21 Ministry of Natural Resources.

22 There was attendance at various meetings
23 by representatives of the Ontario Federation of Anglers
24 & Hunters, the Northern Ontario Tourist Outfitters
25 Association and the Nishnawbe-Aski Nation. Is that

1 your understanding?

2 A. Yes, that is correct.

3 Q. And that was the clarification she
4 wanted added, that the other parties have been
5 involved.

6 So that being the case, I am going to
7 leave it in the hands of Mr. Kennedy now to commence
8 and describe the instructions and help you understand
9 what is the appropriate way to look at these maps.

10 MR. KENNEDY: Mr. Chairman, I thought I
11 would begin with advising you what I think the three
12 main purposes of this panel is; and, that is, that we
13 are going to be providing an overview of the clearcut
14 exercise, which is that mapping exercise that was
15 undertaken by Natural Resources staff to answer an
16 interrogatory, and to explain the maps that were
17 produced during that exercise. We will be examining
18 the factors that have influenced the cutting pattern
19 that will be seen on those maps. And I think a third
20 purpose of our panel is to discuss the management
21 implications of those types of areas that you see both
22 from a forester's viewpoint and from a biologists
23 viewpoint.

24 As such, we will not be going into every
25 detail of the mapping exercise nor will we be going

1 into the detail of each of the maps that were produced.
2 And I should advise that there has been several drafts
3 of the exercise that have been provided in the
4 statement of evidence for reference purposes.

5 On a similar note, we will not be
6 discussing the range of ideas that were explored by the
7 technical committee, but instead we will be dealing
8 only with the instruction package that was the final
9 package used by our field staff during the preparation
10 of these maps.

11 This clearcut exercise had its origin in
12 the form of an interrogatory; that is to say, that
13 Forests for Tomorrow posed an interrogatory in
14 conjunction with Panel No. 10, it was Interrogatory No.
15 24.

16 That interrogatory stated the following:
17 What is the maximum size of clearcuts occurring in
18 Ontario at the present time in one cut; and, secondly,
19 in contiguous cuts? Mr. Chairman, then that became the
20 focus of our efforts which resulted in this particular
21 exercise.

22 I would like to point out that the
23 question is dealing particularly with or is dealing
24 with Ontario only and, as such, that I believe we have
25 all heard of examples of clearcutting practices that

1 are used in other jurisdictions, such as clearcutting
2 as practiced in mountainness terrains or in tropical
3 rain forests and this panel will not be dealing with
4 areas such as that. We will be dealing though with --
5 dealing with the situation in Ontario and providing you
6 a description of the application of the clearcut
7 silvicultural system as it has been developed to suit
8 the management needs of the species that are found here
9 in Ontario.

10 At the very beginning of our
11 deliberations of how to respond to that interrogatory,
12 several Ministry of Natural Resources staff examined
13 and analysed different ways of collecting information
14 that would allow us to answer that question. One of
15 our basic problems in trying to answer that question
16 was that there are several attributes that can be used
17 to describe an area that is clearcut and that any
18 combination of those attributes would depend upon the
19 particular point of view or particular purpose to which
20 an individual is trying to answer that question; that
21 is to say, that there is no one definition, no single
22 definition that adequately defines a clearcut for all
23 purposes. So that is why this panel will be examining
24 the definition from different perspectives, in this
25 case from both a forester's viewpoint and the wildlife

1 biologist's point of view.

2 And because we were unsure as to the
3 perspective that Forests for Tomorrow staff wanted to
4 put on the results of the exercise, we felt that it was
5 important to discuss with them at the outset the
6 attributes that were of interest to them. And,
7 consequently, we consulted with them before engaging in
8 any of our exercise, and the reason for doing that was
9 that from the beginning we realized that an exercise
10 such as this would be quite complex, costly and time
11 consuming. We wanted to be sure that we were going to
12 be able to provide them with information that met their
13 needs as well as adequately addressed the situation as
14 it is in Ontario.

15 I think you will recall that we did have
16 some early discussions with them. Some other parties
17 at the hearing expressed an interest and subsequently
18 got involved. The results of that interest was the
19 formation of a small technical working committee which
20 had the responsibility of developing the methodology
21 for the exercise and specifically to develop the
22 methodology that would provide an answer to the
23 interrogatory that was acceptable to all parties.

24 The technical working committee then was
25 comprised of the following organizations and

1 individuals who represented them. Forests for Tomorrow
2 was represented by Crandall Benson. OFIA/OLMA, Ontario
3 Forest Industries Association and Ontario Lumber
4 Manufacturers' Association was represented by Bill
5 Roll.

6 THE CHAIRMAN: How do you spell his last
7 name.

8 MR. KENNEDY: R-o-l-l, Roll. And
9 Ministry of the Environment was represented by the
10 well-known Mark Sutterfield and Ministry of Natural
11 Resources were represented by myself.

12 This committee met several times, had
13 lengthy discussions, some that were approaching
14 debates, but we were able to come to a conclusion on
15 how to present the information before the Board at
16 least in a factual form that results in this mapping
17 exercise.

18 I would like to put an overhead up. By
19 way of trying to summarize some of the discussions that
20 we had that eventually led to the specific items in the
21 methodology, I would say that we set out at the
22 beginning with an idea of tying the two questions that
23 were asked of us, tying them together and looking at
24 the area of largest cuts occurring in one year as well
25 as the largest contiguous cuts.

1 We recognized that it wouldn't be
2 possible to sample the entire province and we decided
3 to focus on sample management units which were chosen
4 by the committee and that are distributed across the
5 portion of the area of the undertaking where the
6 clearcut silvicultural system is most prevalent.

7 The management units that were chosen
8 provide a broad representation of the different forest
9 conditions that are encountered across the portion of
10 the area of the undertaking, and those management units
11 include units of all three types; that is, forest
12 management agreement areas, company management units,
13 and Crown management units.

14 The attention of the committee then in
15 choosing different management units was to find those
16 that would be expected to show a range of the largest
17 clearcuts occurring across the area of the undertaking.
18 And I believe one of the strengths that the committee
19 recognized is that we would want to have an exercise
20 that resulted in putting factual information before the
21 Board so that the final result would be mapped
22 information for those units that would show the
23 conditions in the largest clearcuts in those management
24 units.

25 The committee prepared a set of mapping

1 instructions that were provided to our field staff and
2 they can be found in the statement of evidence
3 commencing on page 39. The nine management units that
4 were chosen are listed on page 41 of the statement of
5 evidence, and I would like to read those into the
6 record as I will be referring to the maps by using the
7 maps shown here.

8 So if I could ask you to turn to page 41,
9 as well you may want to refer to page 42 which shows
10 the location of those management units on a Figure 1
11 which is a small scale map of the management units in
12 the province with the management units that are shaded
13 or highlighted being those that are used in the
14 clearcut exercise.

15 So those management units that were
16 sampled are the Gordon Cosens Forest, the Kapuskasing
17 Crown Unit, the Wawa Crown Unit, the White River
18 Forest, the Matawin/Dog River Forest, the Fort William
19 Crown Management Unit, the Domtar Armstrong Company
20 Management Unit, the Red Lake Crown Management Unit,
21 and the English River Forest.

22 THE CHAIRMAN: Mr. Kennedy, is it the
23 case that to the east portion of the area of the
24 undertaking where there isn't a sample taken that (a)
25 is a different type of forest essentially in that end,

1 not so much the boreal forest; and, secondly, are there
2 or are there not large clearcuts in that area?

3 MR. KENNEDY: Clearcutting is practised
4 in the eastern part of -- that northeastern part of the
5 area of the undertaking, yes, and we felt that
6 particularly the northern portion will be represented
7 by the Gordon Cosens and the Kapuskasing Crown Unit and
8 their southern portion would be represented by some of
9 the harvesting practices in the -- similar to those
10 that are in the Fort William Crown Unit and portions of
11 the Dog River, and then the balance of that area which
12 I would describe as the extreme southern part of that
13 northeastern part of the province, would be in a
14 transition zone between the Great Lakes and the boreal
15 forest where clearcutting would be similar to that
16 which is covered in the Wawa Crown Unit and the White
17 River Forest.

18 Now, I should point out that during the
19 development of the mapping -- or sorry, after the
20 development of the mapping exercise, that there were a
21 number of minor changes that were made by the Natural
22 Resources staff that were involved and I would
23 characterize those as fine-tuning the exercise, that
24 they, during their actual preparation of the maps, came
25 across a number of matters that they felt would improve

1 the clarification of the information, and I will be
2 describing those as I proceed through the explanation
3 of the maps that we have.

4 I put on the screen the second overhead,
5 and there are a number of key points I would like you
6 to keep in mind during the presentation, and some of
7 these result from questions asked and also the
8 deliberations of the committee.

9 What I think is most important to keep in
10 mind is that the information that we are presenting is
11 just a snapshot in time. We have stopped the world in
12 those management units and we are using the 1987/88
13 year for capturing the information relative to the
14 largest cuts that are occurring to answer that
15 question.

16 The 87/88 year is the information -- is
17 the most current information that is available at the
18 time of the outset of the exercise, and we have used
19 that year in each one of the management units and we
20 have used it as a starting point in answering the
21 second part of the question that deals with contiguous,
22 and I will be talking in some more detail about that.

23 Whenever there were choices to be made in
24 mapping an area, we always skewed the instructions to
25 the field to choose the option that would be: skew the

1 information to the large size, again, in order to
2 address the question that was posed of us. So there
3 are other harvesting blocks that have occurred out
4 there on these management units, we will be
5 demonstrating the largest block.

6 The committee felt that it was important
7 to provide a visual means of communication for the
8 information that would be collected in the exercise,
9 but they would have to be technically based and be
10 presented in a fashion that was visual -- or sorry, a
11 fashion that led itself to easy visual communications
12 and the necessary tables that would accompany it to
13 provide some factual information.

14 As such, working through the committee,
15 we had the idea that we would provide that factual
16 information to the committees and allow the analysis to
17 be left up to each individual user, and that the
18 detailed information that we were providing them with
19 the post-harvest forest conditions in a single largest
20 cut, we felt that it would be reasonable to assume that
21 these post-harvest forest conditions could be similar
22 in the contiguous area if we were viewing those
23 immediately after the harvest.

24 When we came to deal with the second part
25 of the question, the contiguous cuts, it posed two

1 problems: How long in time should we go back; and,
2 secondly, at what point in the cut is there a break
3 that is large enough so that the area should no longer
4 be considered as part of the contiguous cut. So we did
5 have to come to grips with what is meant by contiguous.

6 So our instructions have resulted in a
7 mapping exercise and, for that exercise, we have ended
8 up with three maps according to our instructions: An
9 index map to the 1987/88 harvested area, a detailed map
10 which deals with the 1988 -- 87/88 harvest map, and a
11 contiguous harvest map and, in addition, we have added
12 a key map which is one of the suggestions that came
13 about as a result of the input by one of our field
14 staff.

15 The suggestion was that they could be
16 used as an index map for the entire exercise, so the
17 complete set of maps now for each one of the nine
18 management units is comprised of four maps.

19 During the development of the exercise we
20 also developed a common legend and a common colour
21 scheme to be used throughout. And we are going to be
22 using the Dog River/Matawin example -- sorry, we will
23 using the Dog River/Matawin management unit as the
24 example as we go through an introduction to each one of
25 these types of maps.

1 Now, the reason that we have chosen the
2 Dog River/Matawin is very simple, is that it is close
3 to Thunder Bay and has allowed us an opportunity; that
4 is, the panel members, an opportunity to get out and
5 have a firsthand look at the area and gain some
6 firsthand knowledge.

7 And we found that when we were preparing
8 our evidence to put before you, Mr. Chairman, that
9 looking at the photographs and the maps and looking
10 at -- still left us in need of some more detail and we
11 had an opportunity to get out and ground cruise some of
12 the information and interpretations that we made
13 looking at that information.

14 The thought has also gone through our
15 mind that due to the location of this sample area that
16 it would be possible to arrange a one-day site visit,
17 if it was requested by the Board, but in my view it is
18 not necessary given the number of other previous visits
19 that the Board has made to several areas in the boreal
20 forest where the clearcutting silvicultural system has
21 been used, but certainly that kind of a field visit
22 could be arranged.

23 I intend now to go through each of the
24 four maps that deal with the Dog River/Matawin area and
25 use it in a generic sense. We won't be looking at the

1 details of that area other than to explain the mapping
2 exercise and how it has come about.

3 We put an overhead up entitled Maps which
4 provides a brief summary of the points that we will be
5 making during this part of the presentation and I would
6 like to move around and go to the maps to illustrate
7 those factors.

8 Mr. Chairman, we've set up the Dog
9 River/Matawin example here to my left and there are the
10 location of the four maps being used. This is the key
11 map here. Map 1, I will be sliding out in just a
12 second, it is tucked away over here, it is a large map,
13 and Map 2 and Map 3. (indicating)

14 It's our intention to use this series of
15 maps to introduce the results of that mapping exercise
16 in a generic sense and then come back and talk in
17 detail, in an overview sense, of each one of the
18 management units and point out some of the anomalies
19 and some of the specific information that catches your
20 eye as you look at the maps and make reference to the
21 notes that we have provided you.

22 So first, the key map. The key map of
23 the Dog River/Matawin is at a scale at 1:250,000 and
24 the purpose of this map is to provide some orientation
25 to where the management unit is and also to provide

1 orientation to the other maps that are used in the
2 exercise. This map allows the viewer to orientate
3 themselves; for instance, here is Thunder Bay, and
4 Highway 17 and 11 here, Highway 17 going north through
5 the management unit and Highway 11 going this way.
6 (indicating)

7 The management unit is shown in the
8 outside dark boundary as such and the various parts of
9 the maps, which comprise Map No. 1, are labeled on this
10 map. (indicating) And I realize from your distance you
11 cannot see at the moment, but this says Map 1(f).
12 This label reads Map 1(e), Map 1(c) and so on and, as
13 such, provides a key map or index to where you are on
14 that entire management unit.

15 Also, we have keyed in Map No. 2 and Map
16 No. 3 onto this key map. Map No. 2 is drawn to scale,
17 it is in this area that I am outlining now with the
18 light pen, that is at the southwesterly portion of the
19 management unit. (indicating) Map No. 3 is located
20 just above that and I will outline that with the light
21 pen so it could be described as being in the western
22 boundary of the management unit approximately centre of
23 that area. (indicating)

24 So, again, the key map's purposes is to
25 orientate yourself to well-known features such as

1 Thunder Bay, to describe the boundaries of the
2 management unit, and to key in the location of the
3 other maps that are used in the exercise. There is a
4 key map that has been prepared for each one of the nine
5 management units, we have only chosen to show the one
6 for the Dog River because of the bulk of the maps;
7 however, a complete set of these are present in the
8 reading room.

9 This large map, which I have just slid
10 out on the sliding door, this large pull-out is Map No.
11 1.

12 THE CHAIRMAN: I'm sorry we didn't have
13 a drum roll for that.

14 MR. KENNEDY: This map shows the full
15 location of the management unit again, and if I can
16 turn my back here just for a second and use the light
17 pointer. I would ask you to shift your eyes between
18 the key map that shows the outline of the management
19 unit and the individual parts that made up Map No. 1,
20 you will see a resemblance to the outside shape,
21 general shape of this map.

22 Now, the Map 1s are at a scale of
23 1:63,360 or 1:50,000, depending on what's available on
24 the management unit. The purpose of the Map 1 is to
25 record the location of the entire 1987/88 harvest area

1 and to show the location of the largest block. In
2 fact, this map allows you to locate and find the
3 largest block that was harvested in that year. This is
4 important because the largest block becomes a subject
5 matter of the next map.

6 So, again, on this management unit, the
7 Dog River/Matawin, looking at Map No. 1, the outside
8 management unit boundary is shown and the various -- to
9 orientate ourselves, Highway 17 is this way, Highway 11
10 coming down through here (indicating), and the next
11 thing is to look for where on the management unit was
12 harvesting occurring in 1987/88, and we find harvesting
13 occurring in almost every corner of the management
14 unit.

15 There is a portion in the upper left-hand
16 corner which is outlined in black which shows a small
17 block that was harvested. There are other locations of
18 harvesting, such as here, central, and this location,
19 and this location, over here there is a small portion,
20 and up here there is a portion. (indicating) So
21 there's harvesting occurring throughout that management
22 unit in those locations.

23 So this map was used then to identify
24 where the largest block is occurring in that one single
25 year and that area was located and then shaded. And

1 that area that we see is here, shaded in
2 cross-hatching, is the area of the largest block that
3 was harvested in the one year and this becomes a
4 subject matter of Map No. 2.

5 Therefore, I would suggest to you that
6 one of the purposes of this map is to verify the
7 location of that largest block and serves as an audit
8 trail in the exercise so that other individuals can
9 come along and locate which is the largest block which,
10 again, we will be providing additional details to in
11 the balance of the exercise.

12 I should put into context for you this
13 kind of mapping. This key map that we referred to
14 first and shows the entire management unit at a smaller
15 scale is a map similar to that that's used in a timber
16 management plan to locate the -- to show the location
17 of the management unit; and maps such as this one, Map
18 No. 1, are used in districts and by company staff to
19 keep a record of the areas that are harvested on an
20 ongoing basis and each year a new harvest area is added
21 to that map, so it serves that kind of a record
22 purpose.

23 Now, I would like to slide this big
24 fellow away and bring out Map No. 2 now. That is map
25 No. 2 for the Dog River/Matawin and it is at our normal

1 FRI scale, as is all of other Map No. 2s for each of
2 the nine management units; that scale being 1:15,840.
3 The purpose of this map then is to show the largest
4 harvest block and to provide some detailed information
5 about that area.

6 So essentially this shows three main
7 things. First of all, the largest block is outlined.
8 Now, you can see from the distance that you are at
9 there is a colour scheme which I will go into in a few
10 minutes; that colour scheme shows the post-harvest
11 forest conditions in terms of crown closure, it shows
12 the outline of the largest harvested block in the
13 single year, and it provides an area of the block and
14 of each of the categories within the block.

15 On each of the maps that have been
16 prepared there is a legend on the maps and there is a
17 very detailed legend on Map No. 2 which shows a variety
18 of colors that are keyed into the categories that have
19 been used to break down the various conditions that
20 have been found following the harvest.

21 The parameter that was decided upon by
22 the committee to use to show the detailed information
23 following the harvest was crown closure, and crown
24 closure is a term that is used to describe the amount
25 of area that is occupied by the crown of a tree and, as

1 such, those trees that have a full canopy would
2 represent 100 per cent. A percentage scale is used to
3 describe the amount of crown closure, and those areas
4 that are more open would have less of a percentage.

5 We, in the committee, provided direction
6 to the field staff by way of the categories to be used
7 and these categories can be list -- are listed on page
8 46 of the statement of evidence. I would ask you to
9 turn to there now.

10 The committee chose crown closure as a
11 way of presenting the information because it provides a
12 bird's eye view of the area and provides factual
13 information that can be recorded in a fashion such as
14 we have and made available to all parties for their own
15 analysis and interpretation. So essentially you are
16 capturing on this map a view that you would have if you
17 were flying over this area in an airplane and looking
18 down at it.

19 The categories that are used on this map
20 that deal with crown closure are the uncut conifer or
21 hardwood; the heavy residuals - and the committee chose
22 to describe that as crown closure greater than 60 per
23 cent - moderate residuals, described as having crown
24 closure between 30 and 60 per cent; low residuals
25 between 10 and 30 per cent; and open clearcut as those

1 areas that have less than 10 per cent in crown closure.

2 So the purpose of this map then is to
3 record the divisions of these areas into these various
4 categories and, again, the categories were provided by
5 the joint members of the technical working committee.

6 The MNR staff that were involved in the
7 exercise in colouring the maps and interpreting the
8 aerial photography to provide this information used a
9 photointerpreter scale which is one of the devices --
10 one of several devices which are available to help
11 gauge what per cent crown closure exists in an area.

12 As we have described aerial photographs
13 to you in previous panels, those are what are used for
14 this exercise, along with the interpreter's scale and
15 then the areas are delineated on those photos and
16 transferred to forest stand maps which were then
17 coloured and provide this information.

18 In addition, the colour scheme deals with
19 the categories that are existing within the forest
20 resource inventory and categories such as water, open
21 muskeg, treed muskeg, brush and alder and rock are
22 recorded, and these are these different colours.

23 It is this map that has received the most
24 amount of attention in the exercise and was the most
25 difficult in coming up with instructions as to how to

1 do the mapping.

2 The outside boundary of the area is not
3 as simple as it may first appear to you. We, the
4 committee, have developed a mechanism that we refer to
5 as join-up to address one of the mapping concerns we
6 have which was how to round off the outside bound of
7 the area so we could determine the total area and
8 balance the various categories to it.

9 I would like to draw your attention to
10 page 47 of the witness statement which is a Figure 3
11 which talks of the -- sorry, which provides a
12 description of the join-up, which you may wish to take
13 a close look at while keeping one eye on the map, the
14 Dog River Map No. 2. On this particular map, the
15 join-up provision has been used at this location here,
16 and here, and again here, and here (indicating).

17 The purpose of using that join-up then is
18 to allow for an outside boundary where the total area
19 can be accounted for as well as the sum of all these
20 individual areas, the various categories can be
21 totalled and balanced against the overall outside
22 boundary. So special instructions had to be given to
23 deal with that join-up provision, and there is a
24 description of those instructions given on page 47 of
25 the witness statement.

1 The reason this is necessary was to
2 accommodate the irregular shape of most of the
3 cut-overs and it provides that outside boundary. This
4 join-up rule was used in six of the nine management
5 units. Once the photointerpretation had been completed
6 using the photointerpreter's scale in the crown closure
7 portion and the categories coloured on the map, the
8 next task was to determine the area of each one of
9 these colours that are used in the legend, the various
10 categories of residuals, uncut areas, and clearcut.

11 That determination of area was done in a
12 number of -- using a number of instruments, such as dot
13 grids and planimeters and the result was a summary of
14 the area in each one of the categories, and we have
15 added that to a legend for each one of the maps.

16 So in the Dog River/Matawin there is 48
17 hectares in the water category, there's 432 in the
18 uncut conifer, 199 hectares of low residuals, and 675
19 of open clearcut as some examples. This information
20 has been summarized in the statement of evidence on
21 page 69 in tabular format for all of the management
22 units -- excuse me, page 68.

23 And that's the conclusion of Map No. 2,
24 which is used to provide detailed information of the
25 largest block that was harvested in the one single year

1 largest block that was harvested in the one single year
2 and, as such, provides information that answers the
3 first part of the interrogatory question.

4 Map No. 3 was devised by the committee to
5 provide information to answer the second part of the
6 question which dealt with the contiguous cutting. Map
7 No. 3 then for the Dog River/Matawin is here and, for
8 orientation purposes, we have Highway 11 going through
9 the upper portion of the map in an east/west direction
10 and the location of the Map No. 2 area is used as a
11 starting point, and I will just point this area out on
12 the contiguous map, it's this location here.

13 (indicating) I think you can see the same general
14 shape and the fish-hook type pattern.

15 This Map No. 3 then is used as a --
16 sorry, I had indicated, is used for the contiguous
17 harvest and this map is at the same scale as Map No. 1.
18 So it's either at 1:63,360 or 1:50,000 depending on the
19 type of information that's available for that
20 management unit.

21 As with Map No. 2, there was a need to
22 establish a number of mapping rules in order to have a
23 common understanding of what was meant by contiguous
24 and to provide assistance to the district staff who
25 were preparing the maps.

1 In this case, since there is no
2 definition of contiguous, that was one of the
3 challenges that the committee had, and how to provide
4 or present information on contiguous was also a
5 problem. As a result, the committee decided that we
6 would use the location that was determined to answer
7 the first part of the exercise, that is the area shown
8 on Map No. 2, as a starting point and that we work
9 backwards in time for 10 years. The 10 years was a
10 figure chosen by the committee after some discussion.
11 So, in a sense, we are mapping backwards to 1977/78 and
12 with the inclusion of the 87/88 area there is actually
13 11 years shown.

14 However, because we are trying to address
15 the question of large, we skewed in the following
16 fashion: We wanted to be sure that we had a minimum of
17 three years of harvest to qualify for a continuous
18 pattern, and if that could not be found, then there was
19 instructions to go to the next largest area on the
20 87/88 and that would be found by looking at the
21 information presented on Map No. 1.

22 Now, the two problems that we ran into
23 during the preparation of the contiguous map was at
24 what point do you stop mapping if you run into a break
25 in the area, what constitutes a break in a contiguous

1 pattern that you would stop and call it no larger a
2 contiguous fashion. And the instructions that we came
3 up with, or the committee came up with was to make a
4 break in the contiguous pattern when the area that
5 separates harvest blocks is an area that approximates
6 the size of an average annual harvest block. So it was
7 an arbitrary rule that we arrived at.

8 We also wanted to portray breaks within
9 the harvest block and we came up with a set of
10 instructions that deal with three types of breaks;
11 those that are squarish or rectangular in shape, and we
12 used the suggested measure of 200 metres by 200 metres,
13 and the lineal breaks that are 30-100 metres, which are
14 shown in red, and lineal breaks which are shown in
15 green are those areas that are 100-200 metres wide.
16 I should mention that the first area, the 200 metres by
17 200 metres, is shown in blue.

18 So we wanted to be able to show the
19 contiguous pattern of harvest in an area, we wanted to
20 be able to stop the pattern if there was a large enough
21 area that made a break in the pattern, and then within
22 the area that was shown as harvest cut, we wanted to be
23 able to portray breaks that were within the harvest
24 area and we came up with the three categories.

25 We realize that at this scale of mapping

1 that information is not accurate, it is a portrayal of
2 what exists on that. However, the information that's
3 shown in Map 2 is quite accurate because of the scale
4 involved.

5 The preparation of the contiguous harvest
6 map then required looking at old photographs. We were
7 able to round up photographs that went back to the full
8 period of the harvest and those are photographs that
9 were taken at the time of the harvest and they were
10 used to prepare this map and they were located and
11 consulted to show the lineal breaks. Those aerial
12 photographs, as well as the cut-over maps, were used
13 for this information and that's the kind of typical
14 information we would have in the districts in regards
15 to our cut-over records.

16 So that, Mr. Chairman, is an overview of
17 the three types of maps that were designed by the
18 committee, as well as the form map, the key map, that
19 was added as a refinement as a result of working
20 through the exercise. So there is a complete set of
21 maps for each one of the management units.

22 As I've indicated, in Map No. 1s, there
23 is also those maps available for each of the units, but
24 we have not put those up on the display here today but
25 they are available in the reading room.

1 What we have shown on the display,
2 though, are the two maps that I would consider the more
3 detailed that go directly to answering the question,
4 and those are Map Nos. 2 and 3 for each one of the
5 management units. And I would like to proceed through
6 a very quick overview by referring to the notes that we
7 provided you with for those areas and point out to you
8 some of the more obvious information that I see when I
9 look at those maps.

10 MS. MURPHY: Q. That's Exhibit 1012?

11 MR. KENNEDY: A. Yes, it is. And we
12 will be looking at them from the northwest part of the
13 province and working through to the northeast with one
14 exception, we will be dealing with the Dog
15 River/Matawin area last as it will tie in with the
16 photomosaic which will be the next item that we discuss
17 afterwards.

18 THE CHAIRMAN: Ms. Murphy, how do you
19 want to approach this with regard to taking a break for
20 lunch?

21 MS. MURPHY: Well, I am just thinking
22 now. I think it's possible for Mr. Kennedy to take you
23 quickly through these maps and indicate the things you
24 should look at. I think that we could probably, if we
25 can have a half hour, we can probably get to the end of

1 an introduction of the maps and then a request by the
2 witnesses for you to look at specific things and we can
3 take the lunch break and add perhaps some time to ensure
4 people have an opportunity to look at all of those maps
5 before we reconvene.

6 I think it would be easier for people to
7 look at those maps if the witnesses have had an
8 opportunity to advise what details to look at,
9 otherwise I am concerned we would have to break again
10 after lunch for that purpose.

11 THE CHAIRMAN: All right. Let's do it
12 that way.

13 MR. KENNEDY: Starting then with the Red
14 Lake Crown Management Unit, we are looking at Map 2
15 which again is at a scale of 1:15,840 and on this area,
16 this area is southwest of the community of Red Lake, as
17 we have indicated, and it is in the current timber
18 management plan.

19 The join-up provisions have been used in
20 three locations, primarily to bring the cut-over
21 boundaries out to the water bodies that are here, here
22 and also to join this small block here that was
23 harvested with this main area in order to provide an
24 outside boundary for the area determination.
25 (indicating)

1 In this area most of the cut-over is
2 classified as open clearcut, although we have had some
3 difficulty in our colour photocopying in presenting
4 this particular map. You will note from I believe the
5 distance you are at that it's somewhat dark orange
6 coloured. We had a shift in our colours during the
7 colour photocopying, where on the original this area is
8 more yellow and matches with the legend. I will be
9 describing that again in the Armstrong area.

10 Within this area there are several small
11 patches of the uncut conifer that can be seen by this
12 green shade, and you can see that they are
13 throughout -- scattered throughout, and that there are
14 several patches of low residual as well, and that we've
15 had site preparation, aerial seeding and planting occur
16 since the time of the harvest. (indicating)

17 Map No. 3 then for the Red Lake Crown
18 Management Unit is not linked to Map No. 2 and that's
19 what the N stands for on your sheet, in that it was not
20 possible to find three years' worth of contiguous
21 harvest adjacent to the area shown on Map 2. As a
22 result, the district then used the rule that was given
23 to them by the committee, they found the next largest
24 area and they proceeded to map the contiguous harvest
25 from that location.

1 So this particular contiguous harvest
2 area shown on Map No. 3, which is at a scale of
3 1:50,000 for the Red Lake Crown Unit, is in the
4 location that is west of Pakwash Lake which is at the
5 extreme south end of the unit. Harvesting in this area
6 has been from 1977 through to 1987 with very small
7 amounts harvested in 1977 and '81.

8 What I should point out to you on this
9 area is that there is a different interpretation and
10 that I would have to describe as an error in the
11 mapping exercise in that the staff in this case used
12 the blue coding which was intended to be breaks within
13 the harvest area and they have shown breaks between
14 several of the harvest blocks resulting in that blue
15 shading. For instance, in the upper central area of
16 the contiguous harvest map they have shaded in blue
17 between these three harvest blocks. That wasn't
18 intended by the instructions. The instructions were
19 meant to record the breaks that would occur within
20 these areas. So this is a bit of an oddity with regard
21 to this particular map. Otherwise, I would point out
22 to you that these blocks are rather irregular in shape
23 and that they are scattered and there is many small
24 blocks throughout the contiguous pattern.

25 THE CHAIRMAN: I take it when you are

1 looking for three years of harvesting it is within the
2 10-year period, not three years in a row; is that
3 correct?

4 MR. KENNEDY: It was three years within
5 the 10 years, yes. Any combination of years going back
6 to 10.

7 THE CHAIRMAN: Thank you.

8 MR. KENNEDY: Mr. Chairman, I should
9 point out that I think even from the distance that you
10 are sitting you can get some very important
11 information. I think that by looking at the
12 arrangement of our Map 2s and 3s that what I would like
13 you to pay attention to is the general shapes of the
14 areas and the relative presence of different shading
15 within those areas. So even at that scale I think
16 there is two very important pieces of information.

17 Having said that, I will move on to the
18 English River Forest and look at Map No. 2. This map
19 portrays the situation following harvest, as well as
20 one other silvicultural treatment that occurred on the
21 English River; and, that is, that the area had been
22 tramped, a form of site preparation, in preparation for
23 a prescribed burn.

24 That wasn't intended by the committee
25 when they designed the mapping instructions; however,

1 the aerial photography that was available to the
2 district staff was taken after the tramping operation,
3 so they were using that photography and they presented
4 what was on the photography to be consistent with the
5 information that was being used by other districts.

6 So, in this sense, the open clearcut
7 category, which is shown in yellow, you can see is
8 almost the entire area and there are patches of uncut
9 at the extreme right southeast and northeast portions
10 of this map.

11 This map is also done on a scale of
12 1:15,840. Now, since the time of this mapping
13 exercise, the area has been prescribed burn, about two
14 thirds of it were planted in 1989 with the remaining
15 area to be seeded in 1990.

16 Map No. 3, we have tucked in the corner
17 here for the English River Forest. It's at a scale of
18 1:63,360. In this case, the location of the largest
19 block was used as a starting point which could be seen
20 here as a shaded area on this map. So it was used as a
21 starting point, the district then mapped backwards in
22 time and they were able to, in this case, map a full --
23 almost a full ten years' worth of harvest.

24 This area is linked to that Map No. 2 and
25 both of them are west of the Town of Ignace. So the

1 years of harvest here are '77 through to '80 and '83 to
2 '87 and the harvesting has progressed two different
3 directions in this case resulting in a rather lineal
4 nature, north/south nature of the contiguous harvest
5 block.

6 There are comments shown on this map
7 which deal with blowdown areas which have occurred in
8 1988. 1988, in fact, was the time of the blowdown in
9 this area which is in the central portion which is
10 another one of our instructions to provide that kind of
11 additional information if it was pertinent to the area
12 that was shown on the map.

13 Moving now to the Fort William Crown
14 Management Unit, I am looking at Map No. 2, again at a
15 scale of 1:15,840. This area is located southwest of
16 Thunder Bay and is contained in the 82-92 forest
17 operation plan. In this particular case there was no
18 need to use the join-up provision as there was cutover
19 that was fairly contiguous throughout that area but in
20 a single year without no outside areas that were needed
21 to be included for the joining up, for the purposes of
22 arriving at a total outside boundary. So there is no
23 join-up provision in this area.

24 The largest post-cut category that is
25 shown on this map is low residuals in which is

1 contained poplar and white birch and is shown in blue
2 and I believe you can see that, just that colour
3 pattern from the distance you're at. I encourage you
4 to look at that when you get down.

5 What is interesting is that this area I
6 would have to say is in a transition zone between the
7 Great Lakes and boreal forest. Throughout this area
8 there are several stands of soft maple which are
9 indicative of that transition zone.

10 Moving to Map No. 3, the contiguous map.
11 This map is at a scale of 1:50,000 and the area shown
12 on Map 2 is located within it. As such then they were
13 able to use it as a starting point and continue
14 throughout the mapping.

15 The three types of harvest breaks that
16 have been used are all present within this area and
17 when you do come up you will be able to see the three
18 shades of green, red and blue and the location of those
19 breaks. Again, I would urge you -- just a caution on
20 that, due to the map scale it's impossible to show a
21 30-metre and a 100-metre wide strip, so the width of
22 the pencil line is greater than that distance
23 on-the-ground at this scale. So this information is
24 presented more for a visual presentation which is
25 different than that information shown on Map 2 which is

1 at a scale which allows us to do careful area
2 determination.

3 I would characterize these harvest blocks
4 as being relatively scattered. The individual block
5 sizes are small and there are use of block or
6 rectangular clearcuts that have been described by our
7 witnesses in Panel 10, and you can locate some of those
8 throughout the area adjacent to the road systems and
9 several of the lakes on that particular map.

10 We will skip the Dog River and come back
11 to that management unit and move right on to the
12 Armstrong Management Unit and for Armstrong we have put
13 up two Map No. 2s. Both of these are at a scale of
14 1:15,840 and the upper one is the original map and the
15 lower one, which we will leave up here for you to look
16 at, is our coloured photocopy. We felt that we would
17 keep the original maps rolled up in a safe place and
18 use coloured photocopies for both our work and for
19 those copies, the two copies of maps that we put in the
20 reading room and for those copies that were presented
21 to parties at their request.

22 Incidentally, Mr. Chairman, I should
23 advise you that we provided a complete set of all of
24 these maps to Forests for Tomorrow as it was their
25 interrogatory. So they have a complete set of each of

1 the maps, as well as the table that resulted, and I
2 hope they do take an opportunity to come back and have
3 a look at these other exhibits in conjunction with that
4 other information while reading the transcripts.

5 We did have some difficulty in our
6 mapping exercise and I would like to go back to
7 comments that we made in Panel 15 relative to the ease
8 of reproducing mappings. As you know from looking at
9 the maps in conjunction with the planning panel, it is
10 common to use colours and shading schemes to present
11 information, and we have been encouraged to make more
12 copies of maps available. Colour photocopying was one
13 of the ideas that I had mentioned to you that showed
14 some promise and I believe it does, but there are --
15 there is a need for careful quality control.

16 As you can see on this map there has been
17 what I refer to as a colour shift between the area
18 shown here on the original as open clearcut depicted
19 here by yellow and on the colour photocopying has come
20 out a darker orange. We didn't experience that on all
21 maps, but it does go to show that operator care is
22 needed on that kind of equipment.

23 However, to deal with an overview of this
24 particular area, the Armstrong Management Unit, Map No.
25 2, is located northeast of the Town of Armstrong and is

1 contained in the 85-90 forest management plan. And the
2 use of join-up has been used in this location to join
3 this small harvest block to the balance of the area to
4 allow for outside boundary determination.

5 Again, I should remind you that we are
6 looking at only one portion of the harvest that
7 occurred on that management unit. This is the largest
8 block. There are other areas that have been harvested
9 on most of these management units, and I will remind
10 you, the various distances between those areas is as
11 shown on Map No. 1 for the Dog River/Matawin.

12 I think one of the more visible features
13 on the Armstrong map is the very clear definition of
14 moose corridors areas, areas that have been left to
15 provide moose habitat. There are a number of them that
16 did stand out very easy and are shown on this as uncut
17 conifer or hardwood.

18 Looking at Map No. 2 then -- sorry,
19 moving from Map No. 2 to Map No. 3 for the contiguous
20 harvest, the area shown on Map No. 2 again was not the
21 largest block -- sorry, it was the largest block, did
22 not allow for three years' harvest adjacent to it, so
23 the staff had to move to the second largest block.
24 This area then shown on Map No. 3 for the Armstrong
25 Management Unit is at a scale of 1:63,360 and it's

1 located southwest of the Town of Armstrong.

2 The years that happened to exist, the
3 years of harvest that happened to exist there were from
4 1982 to '87. And I should point out that there are all
5 three forms of breaks within the harvest area and are
6 shown and depicted on this map in the colours as
7 provided by the committee, red green and blue.

8 The Wawa Crown Management Unit, Map No.
9 2, is at a scale of 1:15,840 and this area is located
10 northwest of the Town of Wawa and that were no areas --
11 I beg your pardon, there is one area of join-up used on
12 this map, there is a small block to the southwest
13 corner had to be joined up in order to provide that
14 outside boundary. This results then in an area of
15 uncut conifer being included as well as an area of
16 treed musket shown in the totals.

17 The area 2 -- or sorry, the areas shown
18 on Map No. 2 does not correspond to the largest block
19 that is shown on Map No. 1 for this management unit.
20 This is the only case where this has arisen and this is
21 the second largest block shown on Map No. 1.

22 Now, the reason for that was the staff in
23 their preparation of the map located the largest block
24 using Map No. 1 and from their aerial photography and
25 from their personal knowledge knew that that area had

1 received a partial harvest and that there was only 20
2 per cent of the volume harvested in that area.

3 And, again, because we were trying to
4 answer the question: What is the largest area cut in a
5 single year or the contiguous, I gave them instructions
6 to proceed to the next largest, which they had
7 described to me as having had a clearcut silvicultural
8 system applied and had more open clearcutting. And so
9 so although the area is smaller, it is more along the
10 line of answering the question.

11 Map No. 1 again is available with the
12 complete set of maps and if anyone wishes to see that
13 area, both of them are depicted on the Map No. 1s and
14 there is a note to that effect.

15 I should comment that the Wawa Crown
16 Management Unit, this area that is depicted on Map No.
17 2 then, happens to be the -- sorry, the smallest of the
18 total areas that are mapped in the exercise and is
19 shown on the table on page 68.

20 Moving to Map No. 3 for the Wawa Crown
21 Unit, this contiguous harvest map is at a scale of
22 1:250,000 and the area that is depicted in Map No. 2
23 was used as a starting point. It's in the southwest
24 portion of that harvest area and, in this case, the
25 only years of harvest are from 1984 to '87 and in terms

1 of the kind of information presented with that
2 contiguous harvest area there are two blocks within
3 there -- sorry, two categories within that, a 30-100
4 metre and the 200-by-200 metre square areas.

5 Moving to the White River Forest, Map No.
6 2 is at a scale of 1:15,840 and the area is located
7 northeast of the community of White River. There are
8 several areas of join-up that were used in preparation
9 of this map. There's an area here in the southern
10 portion, there is another in the central area in here,
11 again, to tie-in outlying blocks of harvest to the main
12 area in order to provide an outside boundary.

13 The more noticeable feature on this one,
14 I believe, is the two road right-of-ways which have
15 been included as they were adjacent to the block and
16 connected. So that is what accounts for those two
17 snake-like areas shown in yellow on the map. Those are
18 where roads will be built the following year.

19 This map has a very irregular shape to it
20 and I would describe it as having two separate lobes to
21 the cut, however, they were regarded as being together
22 for the purposes of answering the question: What is
23 the largest in a single year.

24 So, again, the instructions to the field
25 staff through consultation while they were preparing

1 the exercise skews the data to the largest. And I
2 point out to you that I believe even from the distance
3 that you are sitting away you can see the irregular
4 pattern as well as the mix of colours which indicate
5 various categories of degree of residuals, as well as
6 the various topographical features described by the
7 forest resource inventory and that they are basically
8 mixed throughout the area. This particular area, as
9 some of the areas, has had a number of repeated
10 infestations of spruce budworm and that has contributed
11 to some of the mystery which you see here.

12 One item of interest, I believe this is
13 the only area that it shows, that in stand 251 which is
14 the area that is in the upper left-hand or upper
15 northwest portion of the map shown in brown, heavy
16 residuals, in fact is recording an area that is in a
17 group seed tree prescription. But, again, as the
18 information is taking a bird's eye view of what you
19 would see as you were flying over the area, it's not
20 separated out, it's just recorded as what you would see
21 from the air which is a series of trees in groups which
22 have been satisfied to provide seed for regeneration --
23 for natural regeneration of that area.

24 Since the mapping exercise, several of
25 these areas have been -- or sorry, other areas on this

1 map have been tracked and a prescribed burn has taken
2 place in the southern portion of this area.

3 Map No. 3, the contiguous harvest map for
4 the White River Forest is at a scale of 1:63,360 and
5 Map No. 2 is not linked to Map No. 3 in that there
6 wasn't sufficient years of harvest to qualify. So they
7 had to go to the second largest block on Map 1 to use
8 as a starting point and then follow the normal
9 instructions.

10 That area then has got years of harvest
11 1980-81 and 1983-1987, and I would just comment that
12 all three forms of break within the area are shown on
13 this map.

14 Moving to the Kapuskasing Crown Unit, the
15 Map No. 2 is at a scale of 1:15,840 and that there are
16 no join-ups in that the area is fairly regular and
17 there were no outlying small blocks which needed to be
18 included. The area has been harvested in winter, and
19 the reason I am pointing that out is that you will not
20 see any road systems within this area if you were to
21 take a closer look at it.

22 The largest category, post-harvest cover,
23 which is moderate residuals in this case, makes up
24 almost the entire portion of this cut, 501 hectares out
25 of a total of 588. And this residual represents poplar

1 and balance balsam fir in this particular...
2 (indicating).

3 The area that is shown in Map No. 3, the
4 contiguous harvest map for the Kapuskasing Crown, this
5 map is shown as 1:50,000 and the years of harvest here
6 are 1979/80, 83/84 and 87/88, and there are only two
7 types of lineal breaks within there shown in the red
8 and the green.

9 The Gordon Cosens Forest Map No. 2, again
10 is at a scale of 1:15,840 and this area is southwest of
11 Kapuskasing and is contained in the 85-90 forest
12 operating plan and it was necessary to use the join-up
13 provision in several occasions in order to account for
14 some of the small blocks that were lying just outside
15 of the larger block. And, again, wanting to skew it
16 finding the largest area, accounting for the largest
17 area, those areas have been joined up using the dotted
18 lines and the area within dotted lines and included in
19 the totals. So this area, again, there are several
20 areas of uncut hardwood and conifer that have been
21 included to balance the total area.

22 And I should point out that it's the
23 Gordon Cosens Forest that has the largest total area
24 mapped in the exercise, and that can be seen on the
25 Table 1 shown again at page 68.

1 Of interest, in this area there has been
2 heavy damage by spruce budworm by repeated infestations
3 and that most of the harvest in this area was regarded
4 as a salvage harvest as a result of the damage that
5 occurred by budworm defoliation.

6 In jumping now to Map 3, the contiguous
7 harvest map for the Gordon Cosens forest, it is at a
8 scale of 1:63,360 and the area is not linked to the
9 area shown on Map No. 2. However, this area is due
10 west of the Town of Kapuskasing and the areas shown in
11 harvesting are full range of years 1977 through to '87
12 and within that harvest blocks there are all three forms
13 of breaks and all three categories.

14 However, I would make a caution on three
15 areas that I believe you can observe from your seat.
16 There are three areas in blue that are -- two of them
17 being on the western edge of the map and one in the
18 central portion of the map, that are a result of using
19 the form of -- a form of join-up provision in
20 conjunction with road right-of-way cutting, and when
21 you are able to come up and have a look at this map
22 during the break, I think you will be able to see that
23 there is an open area that is not coloured that bounds
24 these and they are showing road right-of-ways.

25 The staff in preparing this particular

1 map chose to use a join-up provision to show those
2 breaks. It wasn't intended by the committee when the
3 instruction package was being prepared. The join-up
4 provision was intended to be used only on Map No. 2.
5 So, as such, I would suggest that you, as best you can,
6 ignore those areas when you are looking at the
7 contiguous map for the Gordon Cosens forest.

8 Returning now to the Dog River/Matawin
9 area, looking at Map No. 2 which is a scale of 1:15,840
10 as all the Map No. 2s have been, the join-up provision
11 has been used here to account for some of the outlying
12 blocks that were in two locations that were necessary
13 to join up the total block. There is one unusual
14 situation that resulted here in that there had been
15 some harvest occur in a previous year. Again, we are
16 answering the question of a single year harvest, but in
17 order to account for areas that had been harvested,
18 they are shown in white between the join-ups, and there
19 is a note on this legend that points out the
20 particulars in that regard.

21 This is not unusual in that when we are
22 preparing a mapping exercise and keeping our records we
23 have overlapping areas of harvest, the trees of course
24 are not being harvested twice but some of the ground
25 is -- the form of mapping allows you to have some

1 overlapping lines, if you will, and care should be
2 taken when looking at that area that it is not in a
3 rock category and should be noted that there was no
4 rock present in the Dog River/Matawin in Map No. 2.

5 I would suggest that, again from the
6 distance you are sitting, you can see the overall
7 outside shape of the cutover and the mix of the various
8 categories that are there.

9 Moving to Map No. 3, as I have indicated
10 earlier Map No. 2 is at present within this area and
11 was used as the starting point for the preparation of
12 Map No. 3, is located there in the western portion.
13 You can see the general hook shape, and the mapping has
14 progressed backwards in time and has ended up with cuts
15 proceeding right out to the location adjacent to
16 Highway 11.

17 The years of harvest then in this
18 location are from 78/79 and 80-87 and within that
19 harvest area all three forms of categories of breaks
20 are shown. And as was shown on the English River map,
21 there are some notes that indicate blowdown that have
22 occurred in that area, and I believe this is blowdown
23 that occurred during the same windstorm.

24 Mr. Chairman, that completes the overview
25 of the maps that were produced as a result of the

1 clearcut exercise. And we have one additional or one
2 key additional piece of information in relation to the
3 Dog River/Matawin, that is an aerial photomosaic which
4 is aerial photographs which have been cut and pasted
5 together to provide an indication of the conditions
6 that are found in this area.

7 This aerial photomosaic has been prepared
8 after the clearcut exercise, it was not part of it, and
9 it has been prepared at our request and it's been
10 prepared using photography that was taken last month,
11 December, 1989. The scale of this photomosaic is at
12 the same scale of a typical FRI map which is 1:15,840.
13 So, as such, it is the same scale as Map No. 2 that we
14 have described for the Dog River/Matawin area, but I
15 should point out to you the time difference. Map No. 2
16 is prepared using aerial photography that was taken in
17 1987, this photomosaic is using photography in 1989.

18 So there are some features on this map
19 that -- sorry, on this photomosaic which will be
20 different if you were to compare the two sets of
21 photography, and indeed some of the information
22 presented on Map 2 would be different than that that is
23 shown on the photomosaic as additional activities have
24 occurred in that area.

25 The area that is covered by the

1 photomosaic is roughly the same area that is shown as
2 the contiguous harvest which is shown on Map No. 3. If
3 I could draw your attention back to No. 3 for the Dog
4 River/Matawin, I did not point out this green line
5 which is shown on that exhibit which is the outside
6 boundary of the area that is covered by the
7 photomosaic.

8 You will see then that the photomosaic
9 does provide information on the 1987/88 single year
10 harvest in the western portion and the entire area that
11 is mapped as the contiguous harvest right back up to
12 where that road system adjoins Highway 11.

13 We thought this would be a very useful
14 way in providing the Board with additional information
15 to supplement that information that was prepared as
16 part of the clearcut exercise and it would assist those
17 that are looking at interpreting what they see on the
18 sets of maps for this area and provide them with an
19 ease, I think, of understanding that contiguous harvest
20 area.

21 Now, I should point out a number of
22 features on this photomosaic. So by way of orientation
23 then, the same area shown on Map 3, in the upper
24 right-hand corner of this photomosaic is Highway 11 and
25 then we have a hydro line and a railway which are shown

1 here. Some of the other features that help to
2 orientate are Upper Shebandowan Lake, this large water
3 body here, Burchell Lake in the central area of the
4 photomosaic, and we have labeled a number of other
5 smaller lakes, Fountain Lake and Moss Lake.

6 Although it goes without saying, I want
7 to remind you that December '89 means that the
8 photography has been taken at a time of year when lakes
9 are frozen, when trees are in a leafless condition,
10 when shrubs are in a leafless condition and, as such,
11 provides what I would call the bleakest view, if you
12 will, of the area and I think that again skews towards
13 answering the questions that were posed to us.

14 I would describe this area, as well as
15 the area that I described in the Fort William Crown
16 Unit, as being the transition zone between the boreal
17 and the Great Lakes/St. Lawrence Forest. Throughout
18 the contiguous harvest area we have noted several red
19 and white pine in our field visit to the area and those
20 species are generally associated with the Great
21 Lakes/St. Lawrence Forest. But by far the majority of
22 the species that are located in this area, tree species
23 wise, are jack pine, black spruce and poplar which are
24 typical boreal species. Jack pine and black spruce I
25 would have to say would be the predominant species

1 throughout the area, and that there are several stands
2 that are pure to those species; that is, single specie
3 stands, but the majority of stands that are in the
4 mixture of black spruce and jack pine. There are other
5 stands that have poplar or balsam fir or white birch
6 and large cedar was observed in many locations, and you
7 will be seeing that in some of our photography.

8 On this photomosaic we have a number of
9 other labels which I believe you can see from that
10 distance, and I would like to explain what those are to
11 you. In the statement of evidence we have included 27
12 photographs which are included on pages 71 to 84. Also
13 in that statement we provide a key map, a map on page
14 69 which shows the location of the photographs. If I
15 could just ask you to turn to that now. So that is
16 page 69 in the statement of evidence.

17 You all may have it. If you would note
18 that in the key we have noted that it's a stylized map
19 not to scale, but we did make a best attempt to locate
20 the location of the photos, indicate the photo number
21 as well as the orientation on the photograph. To be of
22 further assistance, we have done the same - using
23 labels - on the photomosaic, we have recorded the photo
24 number, indicated the arrow point which is at
25 approximately the centre of the photo in the foreground

1 and we have indicated the orientation of the photo.

2 To further assist, we have taken a hard
3 copy of the slides that we will be using later on in
4 the presentation and affixed them to an overlay and
5 attached it so that you can start to interpret what you
6 see on the photomosaic, along with a ground shot or an
7 aerial view of that same area and we started to develop
8 reference material so you can interpret other areas on
9 the photograph.

10 That information is attached on an
11 overlay; that is, those hard copies and we will be
12 folding that back for part of the presentation.

13 Also there are several labels that are
14 attached to the photomosaic which use an alpha code and
15 the alpha code is displayed in a legend on that area,
16 on that photomosaic and Mr. Greenwood will elaborate on
17 that information.

18 MR. GREENWOOD: Now, Mr. Chairman, we
19 have included this exhibit particularly to allow you to
20 examine a contiguous cut area and see some of the
21 things that are covered within the boundaries which
22 have been mapped on Map 3 and, in particular, the Dog
23 River/Matawin.

24 When you come down to examine the exhibit
25 and get a better feel for what is within it, there are

1 going to be several features that are readily
2 recognizable, but there are others that may not be as
3 recognizable if you haven't been working with aerial
4 photographs to any extent.

5 So I have taken some time to outline
6 various things on this mosaic and give them an alpha
7 code so that you can see some of the things which have
8 been or would have been interpreted by our field staff
9 in the creation of these maps.

10 Even sitting where you are, I think that
11 you can see that the appearance of this photomosaic
12 shows differences in tone, in texture, in contrast and
13 in pattern and it's through interpretation of those
14 features that -- it's through the interpretation of
15 those features that allows us to identify various
16 aspects of what we are seeing.

17 Four that are of interest in this
18 particular case are planimetric features, vegetation
19 cover, geologic landforms and land use patterns, an
20 indication of land use, and I have included those on
21 the overhead. As was mentioned before, this was
22 winter photography, summer photography would be the
23 normal photography that would be used in interpreting
24 these features and specifically would be used in a
25 stereo form where you could also see our topography,

1 but many of the features are recognizable right on the
2 mosaic.

3 Again from where you are, one of the more
4 dramatic features of the mosaic are the large darker
5 gray colours in contrast to the relatively large
6 lighter gray tones. And the darker gray tones are
7 representative of forest cover, mature forest cover,
8 and the lighter gray tones are representative of areas
9 which do not contain mature forest cover.

10 Under the first heading of planometric
11 features, the large obvious features of lakes stand out
12 and we have labeled two or three of those as one even
13 tone, one even pattern representative of the frozen
14 ice. In the summer they would be also an even tone, it
15 would be much darker than the surrounding vegetation,
16 and the lakes would also be readily recognizable.

17 Mr. Kennedy has pointed out hydro lines,
18 highway, railway. Again, they are shown in an area
19 lighter in control but it's mainly through the
20 contrast, their size, their pattern that would allow
21 their identification, fairly obvious features.

22 Open swamps and bogs, treed muskeg, some
23 of the features which were interpreted on the cutover
24 maps, particularly Map 2, are recognizable as well as
25 one of the lighter gray tone where there is not --

1 where they are in contrast with standing forest
2 vegetation they are readily recognizable; they are less
3 recognizable in areas where the vegetation has been
4 removed. And I have identified three of those and
5 lettered them A on this mosaic to allow you just to see
6 that part of the area in the lighter gray colour is in
7 fact open bogs and swamps.

8 Streams and rivers, creeks are also
9 recognizable as an area without obviously forest canopy
10 vegetation. It's the pattern particularly that would
11 allow their identification, and I have identified a
12 stream in the lower right portion and identified it as
13 B.

14 Roads are also of the same gray tone but
15 it's the pattern that they form that allows their
16 identification, and I have identified a road network
17 also in the lower right-hand corner and labeled it C.

18 It's also through this pattern and the
19 tone on the roads that would allow you to determine in
20 some cases the class of roads that you are looking at;
21 the highways with the shape of the curves and the long
22 straight lines versus secondary or tertiary roads where
23 there would be a greater degree of curvature and less
24 straightaways.

25 Some of the human impacts in terms of

1 settlements in use are also visible. I have identified
2 under D in the upper portion a mine where you can
3 actually see the mine shaft through a shadow it creates
4 down in the lower portion, a gravel pit due to again
5 the contrast that it creates with the surrounding
6 vegetation and its relationship to the road.

7 Move on to vegetation cover. These
8 features would be less obvious to a person who is not
9 interpreting photographs regularly, but species can be
10 identified on aerial photographs by the specific tone
11 and the pattern and the contrast that they assume on
12 the photograph, and the degree of crown closure can
13 also be - is also noticeable by the texture that it
14 creates, the texture or the contrast of light and dark
15 within the stands. And crown closure was one of the
16 things that was interpreted during the clearcut
17 exercise.

18 I have labeled under the letter E an area
19 of mixed wood and I have put a little white sticker
20 there showing it's an area of white birch, black
21 spruce, jack pine and balsam fir. If you are looking
22 at the various labels E, I would just suggest that you
23 examine the differences in pattern and contrast and
24 tone and you will see the differences and how an
25 interpreter would be able to determine species that

1 were there.

2 The size of stands are also visible, and
3 I have outlined in the lower right-hand corner under E
4 an area that has relatively large stands, and I have
5 indicated with a letter E a contrasting area in the
6 lower left area where you will see the changes again in
7 texture and pattern that represent changing species
8 over a very -- a small area which is representative of
9 smaller stands.

10 Disturbance, in this case clearcutting,
11 is obvious in its lighter tone, but one of the things I
12 would ask you to examine is within that disturbance
13 area some of the changes in tone and pattern which take
14 place and are representative of the amount of residual
15 left within that area, regenerating growth within that
16 area and, in fact, the point at which that regenerating
17 growth is at.

18 Specifically, I have identified F(1)
19 which is in the far left area which is a recent
20 cut-over and would have little vegetation on the
21 ground; F(2), which is in the central portion and has
22 heavy residual vegetation; and F(3) which is an area
23 which does not have residual stems but has been
24 regenerated and due to its tone and its texture is well
25 along the way.

1 The third thing that you can examine is
2 land forms. I have designated two areas. The land
3 forms are important in terms of the effect that they
4 can have on stand size and species, and I have shown
5 two areas: G(1) upland till or material which has been
6 just dumped by glaciers and which has created a
7 relatively large but very mixed area of species in the
8 central portion of the photomosaic, and G(2) which is a
9 glaciofluvial outwash in this particular area, the
10 middle right, which has created a large flat area.
11 This is water-washed material and would have supported
12 a relatively uniform stand prior to harvesting.

13 Land forms are also important in that
14 they reflect the terrain within the area, or
15 topography, and the effect that that can have on
16 smaller patches of remaining timber, inaccessible
17 timber, inoperable areas. When you come closer you
18 will also see a broad direction of bedrock on the
19 photograph. In this particular area it is mainly
20 running from the upper right to the lower left, from
21 the northeast to the southwest, and that is reflected
22 in fact in the road system that you see here and also
23 in the form that the harvesting takes in this
24 particular area.

25 It is reflected, for instance, in Map 2,

1 the large map of the Dog River/Matawin cut-over which
2 runs from a northeast to a southwest direction.

3 The last thing that I would point out is
4 some indications of land use that you can pick up from
5 photographs. Generally this requires some local
6 knowledge as well, but the majority of the cut takes a
7 very irregular pattern. I have indicated an area H
8 where it follows east/west and a north/south direct
9 line. This is indicative of patent land or private
10 land versus Crown land and a cut boundary. You would
11 also be able to identify in many cases licence
12 boundaries which would also follow a straight line that
13 way.

14 I think that's about it for the mosaic.
15 I would just, given the time, briefly introduce three
16 other exhibits and ask that you examine them as well as
17 we will be using them in later evidence.

18 Two maps to my left, the upper map being
19 a stand age-class distribution, the lower map a stand
20 working group distribution. Both of these maps are
21 produced at a scale of 1:31,380, so they are inbetween
22 the two scales that we have been showing you on Map 2
23 and 3.

24 The stand age-class distribution is
25 simply a colouring of the FRI stands to the age-class

1 that they have been assigned to in the FRI. The lower
2 map is a colouring assigned to the stand by working
3 group as it was assigned in the FRI.

4 I would just ask that you note the
5 pattern that that colouring provides and that you
6 examine that pattern in relation to the stand
7 boundaries which are also shown on the map in a black
8 line with a number in the middle of it.

9 These maps were produced at my request by
10 Canadian Pacific Forest Products and you heard,
11 particularly when Dr. Baskerville was here, of
12 geographical information systems. These maps were both
13 produced on a geographical information system using an
14 electrostatic plotter.

15 The final map that I would draw to your
16 attention, actually it is an image as opposed to a map,
17 is the one labelled Interpreted Landsat Imagery. This
18 is a colour enhanced landsat image which has been
19 interpreted by colour to represent vegetation types,
20 and Dr. Abraham will be using this map in his evidence
21 and has I think one or two other points he would like
22 to make about the image.

23 MR. CASSIDY: Maybe, Mr. Chairman, while
24 we are waiting for that, I could just point out for the
25 transcript, I can read it later, the two GIS maps, as I

1 understand it, are Exhibits 1025 and 1026.

2 THE CHAIRMAN: That's right, the two maps
3 over there-- (indicating)

4 MR. CASSIDY: Yes.

5 THE CHAIRMAN: --are 25 and 26. That's
6 correct.

7 MR. CASSIDY: All right.

8 DR. ABRAHAM: Mr. Chairman, the
9 interpreted landsat image is Exhibit 1024, and I would
10 just ask you to, when you come, this will be -- or this
11 is a representation of forest cover types, different
12 colours representing different vegetation communities
13 in simple form; cover types, a little bit more complex.
14 Even this is a simplification and within each colour
15 type there would be some variation on the ground.

16 What I would like you to note in
17 particular is the cut-over categories, the burn
18 categories and the families of colours that represent
19 deciduous and coniferous forest.

20 For a reference, the Dog River/Matawin
21 photomosaic, which is outlined on Map 3 in green and
22 which is represented there in full on the photomosaic,
23 this gives you an idea of the scale of the map that we
24 are dealing with. This is approximately 120 miles by
25 120 miles. It's a good chunk of northwestern Ontario.

1 It is the same scale as represented in the Dog
2 River/Matawin key map right next to it, 1:250,000.

3 MR. McNICOL: And finally, Mr. Chairman,
4 in my evidence I will be referring to the English River
5 Map 2 and 3. What I would like you to take a look at,
6 if you have an opportunity, is the size and shape of
7 the 87/88 large clearcut that's shown in Map 2 and
8 depicted here on Map 3, the size and shape of that
9 clearcut in relation to the other 87/88 cuts that are
10 displayed here on the contiguous map, Map 3.

11 MS. MURPHY: Thank you. We are at the
12 stage now where we can take our break. The witnesses
13 have given you an opportunity to look at the maps and
14 given you some idea what they would like you to look at
15 during the break.

16 I would suggest that you need sufficient
17 time at this point to have some lunch and to give
18 yourself an opportunity for the Board to have a look at
19 these documents and perhaps discuss them between
20 themselves.

21 I will be taking the witnesses away and
22 when we reconvene they will be here to answer any of
23 your questions that you may have before we continue.

24 THE CHAIRMAN: How much time have you got
25 left after we come back?

1 MS. MURPHY: Oh, I would say at least two
2 and a half hours.

3 MR. FREIDIN: And I have got a half an
4 hour.

5 THE CHAIRMAN: On clearcuts?

6 MR. FREIDIN: No, on the AOC portion.

7 THE CHAIRMAN: Oh, on the AOC. So you
8 are talking about three hours after the break.

9 All right. We are suggesting that we
10 break until three o'clock.

11 MS. MURPHY: Fine.

12 THE CHAIRMAN: That will give people an
13 opportunity to have lunch and also come back and view
14 the maps.

15 MR. CASSIDY: Is that all the heat --

16 THE CHAIRMAN: Sorry?

17 MR. CASSIDY: I'm sorry, Mr. Chairman. I
18 can make my comment after.

19 THE CHAIRMAN: And then after that, that
20 will take us to approximately 6:00 or 6:30. So we
21 would plan to complete the direct evidence on both the
22 AOC plus the clearcut issue today.

23 MR. CASSIDY: I was just going to ask if
24 someone can turn the heat up in here.

25 THE CHAIRMAN: And we will give the

1 appropriate instructions as soon as we get out of here.

2 MS. BLASTORAH: Turn it on.

3 THE CHAIRMAN: Thank you. We will
4 adjourn until three.

5 ---Luncheon recess taken at 1:25 p.m.

6 ---On resuming at 3:00 p.m.

7 THE CHAIRMAN: Please be seated everyone.

8 MS. MURPHY: Before we continue with the
9 next part of the evidence, were there any questions
10 that the Board wished to put to the witnesses with
11 respect to the exhibits?

12 MRS. KOVEN: Yes, I had a couple of
13 questions for Mr. Kennedy.

14 When you selected these units to use as
15 part of this exercise, did you go to the unit foresters
16 and say: From your personal knowledge of your area
17 which is a likely candidate clearcut area for this?

18 MR. KENNEDY: No, we did not. We used
19 the experience of those individuals who were in the
20 technical working committee, those individuals
21 represented by the various parties and their knowledge.

22 MRS. KOVEN: Another question. Did all
23 the parties on the technical committee agree to select
24 the Matawin/Dog River unit that we are looking at as
25 the example for a detailed explanation to the Board?

1 MR. KENNEDY: No, we have chosen that
2 example ourselves. The same level of initial
3 information was presented for each of the other
4 management units. We zeroed in on Matawin, as I
5 indicated, primarily because of location, we could get
6 out and have a firsthand look at it.

7 And I should go on and say that the only
8 new information that we brought forward by way of maps
9 or mapping information is the aerial photomosaic and
10 the crown aerial shots that we have included in the
11 statement.

12 MRS. KOVEN: And what are the
13 implications of starting with Map 2 and in some of the
14 cases having a different area in Map 3 because of the
15 three-year harvest criteria?

16 MR. KENNEDY: I don't think there would
17 be any implications I could think of, unless you can be
18 more specific in your question.

19 MRS. KOVEN: In terms of the areas that
20 you were looking at, you had to eliminate some times
21 the area that you had first identified.

22 MR. KENNEDY: That's correct.

23 MRS. KOVEN: In order to get into the
24 ten-year three-year time frame?

25 MR. KENNEDY: That's right, beyond the

1 three.

2 MRS. KOVEN: And was there any sense that
3 the clearcuts would become smaller at that point, the
4 area was smaller?

5 MR. KENNEDY: Yes, the area is the second
6 largest block if there wasn't three years in the
7 contiguous, but then for that second largest block the
8 same level of detailed information is presented, as
9 well as there is the opportunity to view that largest
10 block on Map 1. Now, we haven't put those maps up here
11 today but they're available.

12 MRS. KOVEN: Was there any sense of
13 looking at the areas over 10 years that you could see
14 whether there was a trend towards smaller and larger
15 discreet clearcut areas?

16 MR. KENNEDY: We weren't able to have a
17 look at that question due to the fact that in Map 3,
18 the contiguous mapping, it made no effort to provide
19 area determination by block size within it or comment
20 on the categories that are within the areas.

21 MRS. KOVEN: Thank you.

22 THE CHAIRMAN: Mr. Kennedy, I have got a
23 question on the methodology that you employed in this
24 exercise with respect to the agreement as to that
25 methodology by other parties.

1 I understand that at the outset of this
2 exercise you consulted with the other parties and you
3 formed the working technical committee, I think you
4 called it, and you agreed on how you would go about the
5 mapping exercise.

6 Did all of the parties that participated
7 in this exercise at the outset agree with the
8 methodology that you were going to use to try and
9 answer this question; in other words, answer the
10 interrogatory that was posed?

11 MR. KENNEDY: I would say that I would
12 characterize it as, yes, all the parties did agree. If
13 you recall that prior to sending the final instruction
14 package to the field we did bring it back to the
15 hearing room and filed it as an exhibit, I believe, and
16 at that time I believe Mr. Cassidy with Ontario Forest
17 Industries Association/Ontario Lumber Manufacturers'
18 Association did reserve a right of comment upon seeing
19 the results of the exercise.

20 I don't recall the specifics of the
21 comment, but he did -- I understand his representative
22 did support the methodology in its entirety for
23 collecting the information.

24 THE CHAIRMAN: All right. And although I
25 would suspect that not all parties might agree on the

1 interpretation of the mapping exercise, was it your
2 sense - and we can obtain specific comments to the
3 contrary from other parties, if necessary - but was it
4 your sense that the parties felt that this type of
5 exercise, as you carried it out in accordance with the
6 methodology you proposed to use, would in fact provide
7 a reasonable basis for answering the interrogatory?

8 MR. KENNEDY: Yes, I would say that's a
9 fair statement.

10 THE CHAIRMAN: Okay. Thank you.

11 Do any of the parties present disagree
12 with that last question put to Mr. Kennedy and Mr.
13 Kennedy's answer?

14 MS. SEABORN: We have no objection, Mr.
15 Chairman.

16 THE CHAIRMAN: Mr. Cassidy?

17 MR. CASSIDY: None at this time.

18 THE CHAIRMAN: Okay. Thank you.

19 MR. GREENWOOD: Mr. Chairman, I would
20 like to continue with some of the interpretation of the
21 clearcut exercise and begin by pointing out that if you
22 examine the blocks, both the single year's cut and the
23 contiguous blocks, that one of the factors that strikes
24 you immediately is that they are all unique in size and
25 in shape and they are unique in the colouration which

1 is being shown on the map indicative of various
2 features within that cut-over.

3 I think it is worth spending a few
4 minutes on some of the factors which have determined
5 that size and shape and the colouration on the map. I
6 have split those factors into management factors; that
7 is, those which are being created or are controlled by
8 humans, and natural factors, those which are given to
9 us as a result of a natural process. I have an
10 overhead that just lists them.

11 Evidence has been given in Panel 15 and
12 also in the EA Document that described the creation of
13 eligibility maps for harvesting, it also mentioned the
14 fact that due to the age-class distribution in Ontario
15 being skewed to older age-classes that there was more
16 area eligible and, therefore, there was selection
17 within that eligible area for operating blocks at any
18 point in time.

19 Obviously that process of selecting the
20 blocks would influence the size and the pattern and the
21 shape of those -- of the final cut-over area, as well
22 as the operations which take place within that block
23 once they have been allocated.

24 The management factors that I've listed
25 are some of the factors that are included in the

1 allocation process, as well as some of the operations
2 which take place afterwards.

3 If I could speak first to the stand
4 age-class distribution map. One of the things which
5 was described in earlier evidence was rotation age and
6 its importance in the eligibility of stands. On this
7 map, you may have noticed when you examined it, that
8 the brighter colours, the oranges and the yellows, are
9 the young age-classes, orange being 0 to 20; and as you
10 move through to the darker or deeper colours, through
11 the light green, dark green to the violets and purples,
12 you end up in the age-classes which are over 120 years.

13 This map shows us that within the Dog
14 River/Matawin area, I think this is representative of
15 most of the areas that I have been involved in in
16 Ontario, there are areas such as this area in the upper
17 right-hand corner of this map (indicating) which shows
18 a large block of older timber and age-classes over 100
19 years. You also have smaller blocks of the same, you
20 even have individual stands that would fall into those
21 age-class categories.

22 The same is true of each age-class as you
23 examine it. If you move down an age-class into the
24 green, which is 61-80 years, you will find there's
25 large patches and there's also small patches

1 distributed throughout the map.

2 The forester is looking for these patches
3 when he is determining where to allocate. Another
4 factor that he is examining at the same time is
5 demonstrated on the stand working group distribution.
6 Similar to the above map, there are large blocks of
7 single species. The area again, if I go to the area
8 that I demonstrated in the upper right (indicating), it
9 is a large area which, in this case, is mainly spruce.
10 There are other large areas that are mainly jack pine
11 working group and there are areas of poplar and birch
12 and the other species.

13 When you overlay those two factors, the
14 forester can begin to narrow down where blocks are that
15 would be eligible for harvest and also would be the
16 species which would be desirable to harvest and that
17 would narrow the block down to a smaller size.

18 A third factor that would be examined at
19 this time is the transportation network which is in
20 place. If in fact a large block of the above rotation
21 age timber and of an appropriate species is within a
22 close distance to a road system, as it is here,
23 (indicating) the road system being almost adjacent to
24 that block, then there are no limitations from a
25 transportation point of view in allocating within that

1 block.

2 If a block such as this (indicating) was
3 a long distance from a road, 30 miles, 50 miles to the
4 nearest road, it would not be feasible in most cases
5 due to the practicalities and the economics of building
6 a road to a block like that within the first five-year
7 period. It is a consideration that you would use for a
8 later allocation and you may start moving the
9 transportation system in that direction.

10 You may remember on Map 1 that the
11 cutting was distributed throughout the whole management
12 unit, so the forester is doing this sort of exercise
13 throughout the whole management unit and weighing other
14 factors such as the amount of winter area versus summer
15 area, the stands which have high volumes versus lower
16 volume stands, and that block continues to shrink in
17 size to an area which is then, in their mind, feasible
18 as a harvest block.

19 The third factor that I've listed is
20 stand condition. Stand condition can influence the
21 final size and shape of that block in that if it is a
22 stand which is being disturbed by something such as
23 spruce budworm, it may be that the forester would wish
24 to allocate a relatively large block to salvage that
25 timber before it is depleted through natural causes.

1 The same thing can be true as a result of
2 stand condition due to age. If the stand is in a state
3 of collapse from a merchantable volume point of view,
4 the forester may consider allocating a larger block in
5 order to salvage the merchantable timber prior to the
6 natural depletion.

7 In fact, part of the allocation that you
8 are seeing in gray here is already cut-over on this
9 map. In this case, in this central northeast part of
10 the contiguous cut-over was blowdown and was allocated
11 primarily for that reason. So that blowdown in that
12 stand condition has influenced the contiguous cut in
13 this exercise.

14 There is also the question of other
15 values. We've heard a lot of evidence from Dr. Euler
16 and others about considerations that they include in
17 the final cut-over area such as leave blocks to break
18 up the cut, reserves for aquatic purposes. These other
19 values can serve also to change the shape and the size
20 of the cut-over block. All of these things exist
21 within the contiguous cut-over in the Dog River/Matawin
22 and the single year harvest and have influenced that
23 block.

24 Other values cannot only serve to defer
25 harvest or remove it from harvest in the current

1 allocation, they can also serve to increase the size of
2 harvest. I have personal experience with a case where
3 I would have allocated a harvest over two periods, but
4 due to a concern of a tourist operator of having
5 disturbance twice to his remote operation, he requested
6 that that harvest take place in one period in the
7 shortest time frame possible so that his operation was
8 only disturbed once.

9 So other values can also increase the
10 size. Some of the other ones that we've heard here are
11 increases in size of cut-over to ensure habitat for
12 something like caribou.

13 Mr. Kennedy, when he spoke to the English
14 River Forest, said that one of the anomalies in this
15 mapping was that it was mapped after a silvicultural
16 prescription had been applied.

17 One of the other things that has happened
18 here is that the block size has been changed from an
19 original allocation in order to allow for a proposed
20 silvicultural prescription, in this case, prescribed
21 burning. Prescribed burning requiring a reasonable
22 boundary to control the fire, it's also reasonable that
23 if an allocation by including or deleting a stand
24 allows you to harvest to a boundary and burn to that
25 boundary, that the allocation would take this into

1 account.

2 The same would be true of a single stand,
3 for instance, in the middle of an allocation which
4 would be burned through if it wasn't harvested during
5 the initial operations. So a stand in the middle of an
6 area where a proposed prescribed burn would take place
7 would normally be allocated as well. So potential
8 silvicultural operations can also influence and has
9 influenced in these cases the shape, the size of the
10 block and what the final block has looked like in size
11 with respect to residual.

12 With respect to boundary identification,
13 it is a minor but very practical point which does come
14 into play at times when you're allocating. A stand
15 which meets stand age, proper species and stand
16 condition may be a difficult stand to identify the
17 boundaries of on the ground and it's possible that
18 additional stands will be added to that or that stand
19 would be depleted in order to allow a reasonable chance
20 of identifying the cut boundary on the ground.

21 The last management factor that I would
22 bring to your attention is market or demand factors.
23 This is a factor, but a good example again, would be a
24 unit which is not currently utilizing poplar in their
25 own mill, such as one of our stud saw mills, but which

1 has contracts to supply poplar to another area or to
2 another mill; for instance, a pulp mill.

3 The market demands then would mean that
4 at certain times that licensee would be harvesting more
5 poplar than at other times. That particularly can
6 affect the degree of residual as it is coloured within
7 the boundary, but it also can affect the outside
8 boundary when poplar stands have been allocated and
9 would be harvested because there's a market for that
10 species.

11 I have listed three natural factors. One
12 of the things that we attempted to point out within
13 this case of the Dog River/Matawin on the photomosaic
14 was areas where there were large stands and areas where
15 there were small stands.

16 Another good example is within the White
17 River Forest behind me on the Map 2 for that area, if
18 you look across the top, you see stands that are quite
19 large, from your distance there is less lines, stands
20 larger than a thousand hectares and within the same
21 area, if I move just a few miles to the southeast, I
22 have smaller patches of timber, smaller stands, stands
23 as low as 14 hectares in size. These stands can
24 provide practical limitations to allocations.

25 If one is to allocate stand 38 on this

1 map and allocate it in its entirety, that would be an
2 allocation of 1,020 hectares. That's the way it's
3 recorded in FRI and if you were to allocate within this
4 area, there is a greater chance of having a larger
5 block than if you get into an area where there are
6 greater topographical, hence, site and stand changes.
7 You would still be aggregating stands, but there is a
8 better chance that you would create a boundary of a
9 block within this area.

10 Also with the size and the shape of
11 stands, there is a greater chance that the inside of
12 the cut boundary will be variable in an area where
13 there are small stands. That's usually indicative of
14 site topographical changes and it is those sorts of
15 changes that create the smaller patches of
16 unmerchantable, smaller patches of unmerchantable
17 species, I should say and unmerchantable --

18 THE CHAIRMAN: Excuse me, Mr. Greenwood,
19 I have an urgent call that I have to take for about 10
20 minutes.

21 We will come back at that point. Thank
22 you.

23 ---Recess taken at 3:25 p.m.

24 ---On resuming at 3:35 p.m.

25 THE CHAIRMAN: Thank you, ladies and

1 gentlemen. Unfortunately, we are going to have to
2 break again at 4:00 for about 10 minutes. I have to
3 contact somebody in Toronto at the Minister's Office at
4 that precise time, so I am afraid we are going to have
5 to break for a short time then as well.

6 Thank you.

7 MR. GREENWOOD: Mr. Chairman, we were
8 going through natural factors, we talked about the size
9 and the shape of natural stands as being a practical
10 limitation.

11 The next point that I wanted to make was
12 the presence and location of the waterbodies. I think
13 it's fairly obvious that larger waterbodies serve to
14 break up patches and serve as a boundary of allocated
15 blocks. On the contiguous cut in the Dog River/Matawin
16 example, you can see how Burchell Lake has served that
17 lake, Upper Shebandowan Lake has served that purpose
18 with respect to this photomosaic and the contiguous
19 cutting.

20 Another example of that in this
21 particular area is down in the southwest corner, it is
22 actually under one of these photographs, but the
23 boundary is a creek system down in this corner. Across
24 that stream is in fact eligible stands which, if they
25 had have adjoined this particular area, No. 25 as

1 shown, probably would have been allocated, but because
2 there was a natural boundary there it served as the
3 edge of the allocated block. So presence and location
4 of waterbodies also have affected the final shape and
5 the size of these blocks.

6 The last factor that I would describe is
7 topographical features, and when I was describing the
8 photomosaic originally I talked about some of the
9 glacial land forms which were present and the fact that
10 different land forms reflect different topography. The
11 combination of those two things have a fairly dramatic
12 influence on species within an area and, therefore, the
13 size of stands as well -- sorry, I didn't complete
14 that, species with respect to their relationship to
15 site and, therefore, if you have a large fairly uniform
16 site, the species tend to reflect that in large uniform
17 stands and since size of stand will be reflected in
18 block size, topography is influencing block size.

19 There's also a second way the
20 topographical features will influence and that's
21 through operability. Where you have steep slopes, if
22 they are particularly small, the stand may be allocated
23 but there may be a portion of it that's left
24 unharvested due to operability.

25 There is a good demonstration on this

1 photomosaic of that last point. It's unfortunately
2 under photo 22, but the area marked as E is fairly
3 rugged terrain, as well as the area next to it which is
4 being harvested and marked as 13. If you compare those
5 two areas you will see the species, the stand sizes
6 with respect to topography, and you can compare that to
7 this large area in the centre portion marked as 20.

8 We have some photographs of these which I
9 will be showing later, and also this area with the
10 numbers 8 and 5 which are mainly large outwashes and
11 tend to reflect a totally different vegetation
12 remaining after harvesting.

13 So just in summary, when all of the above
14 factors or all the factors which have been described
15 are considered and then influenced by local objectives,
16 they will result in a unique pattern for each single
17 year's cut block and is reflected in the single year
18 cut blocks behind me, a unique pattern in size of
19 contiguous cutting and what is contained in terms of
20 vegetation types within the boundary of that contiguous
21 cutting, and a unique pattern of allocated but
22 undisturbed stands, whether it be due to inoperability
23 or unmerchantability.

24 In the Dog River/Matawin example, if a
25 forester was reporting that clearcut, he would be

1 reporting it as approximately 1,200 to 1,300 hectares.
2 That would be the clearcut shown on Map 2 for the Dog
3 River/Matawin area.

4 MR. McNICOL: Mr. Chairman, I would like
5 to briefly address the implications of what we see here
6 with respect to the clearcut exercise, specifically
7 with regard to moose.

8 Before I do that, I would like to revisit
9 some of the basic premises that have been given in some
10 previous evidence with regard to habitat.

11 Simply, food, cover and water are life
12 requirements of all wildlife. The need for food and
13 water is obvious. Cover can be used for wildlife for
14 two different purposes; one to moderate environmental
15 effects; and, two, to escape or avoid predators. These
16 elements have got to be found in the proper proportion
17 within the home range of that particular wildlife
18 species.

19 Good habitat is characterized by small
20 home ranges for that particular wildlife species. In
21 other words, all of these elements are found in a
22 relatively small area in relation to the average home
23 range size of the animal. When the animal is able to
24 capture these elements in a relatively small area, it
25 means that the amount of energy necessary to capture

1 those elements is minimized. That is the
2 characteristic of good habitat.

3 With these thoughts in mind, I will speak
4 directly to moose. Application of the clearcut
5 silvicultural system directly affects food and cover
6 balance for moose. Simply, cover in the form of
7 conifer generally is cut, that creates in those
8 openings food through natural succession. A moose does
9 not generally utilize all food that is made available
10 through the application of the clearcut silvicultural
11 system.

12 Most generally the food that is utilized
13 is that food that is close, generally within 200 metres
14 of some type of cover. Where two different timber
15 types or age-classes of the same timber type meet,
16 something called edge is created, and I know you heard
17 that word before.

18 THE CHAIRMAN: Did you say 200 feet or
19 metres?

20 MR. McNICOL: Metres.

21 THE CHAIRMAN: Metres.

22 MR. McNICOL: Where you have two
23 successional stages, let's say the early successional
24 stage created by cutting and a late successional stage,
25 say, a dense conifer stand that meet you create edge.

1 A Swedish researcher once characterized moose as
2 creatures of edge. Quite simply, in good moose habitat
3 there is a lot of edge.

4 I would like to talk briefly about some
5 of the categories of cover type that have been
6 classified in this clearcut exercise. One of the
7 categories that has been spoken to is the open
8 clearcut. This is an area where there is less than 10
9 per cent crown closure after harvest. So in essence,
10 what that means - and you will see pictures of it
11 later - but there are a few scattered trees left after
12 cutting.

13 If browse did not exist in the
14 understorey of that stand prior to cutting; i.e., very
15 closed canopy, not much sun getting to the forest
16 floor, not much coming up, there would be very little
17 browse existing on that site immediately after the cut.
18 About a year after the cut, however, the successional
19 stages start showing up.

20 On most sites poplar, birch, a variety of
21 deciduous shrubby and tree species begin growing. The
22 amount and diversity of the browse material that comes
23 back is a function of site productivity. Where you
24 have got good productivity, good drainage, you are
25 going to have a wide diversity of browse species coming

1 back. These sites generally continue to produce food
2 for moose for 10 to 20 years and, in that same time
3 frame, remember that the cover component that is
4 characterized most generally as conifer is also
5 growing. So coincident with the existence of the
6 browse over time that cover component is going to
7 develop as well.

8 The low residual category, and here we
9 are speaking of crown closure of between 10 and 30 per
10 cent existing after the cut. The residual trees here
11 generally are poplar or birch deciduous trees. There
12 is the same lack of cover, certainly not a coniferous
13 component existing on this site. The amount of browse
14 generally is similar to what exists on the open
15 clearcut category. With that amount of deciduous
16 residual, drainage is not a problem. So the amount and
17 diversity of browse is a function then of site
18 productivity directly. Browse will exist on that site
19 for the same kind of time period, 10 to 20 years.
20 Remember also that the cover, as in the open clearcut,
21 is growing along at the same time.

22 The moderate and heavy residual
23 categories, and here we are speaking now of a site
24 where you have got 30 to, in the case of moderate, 60
25 per cent canopy closure, so now you are talking about

1 quite a few trees left on that site. In the heavy
2 category it's greater than or equal to 60 per cent
3 canopy closure, so now you are talking a lot of trees
4 left on the site, so very few have been removed.

5 The moderate residual, those trees that
6 are left can be all deciduous, all coniferous or a
7 mixture of deciduous and coniferous. The best habitat
8 types for moose are created when you have got a mixture
9 of those residuals, the deciduous and coniferous mix.
10 It's characterized by mature to overmature deciduous
11 component left as residual and an immature to
12 semi-mature coniferous component, those species that
13 were not merchantable.

14 These sites produce a great amount and
15 diversity of browse. The diversity is a function of
16 the different types of growing conditions that are
17 available in this moderate to heavy residual category.
18 You have areas that are available for shade intolerant
19 as well as shade tolerant species because there is a
20 relatively closed canopy.

21 And the thing that makes these areas so
22 attractive to moose is the great deal of interspersion
23 of cover given by the immature and semi-mature
24 coniferous component that is left on the site and food.
25 The one difference between the two of them would be

1 that in your heavy residual category you would have
2 less of the shade intolerant species because canopy is
3 more closed.

4 The last category is the uncut dense
5 conifer or hardwood. These categories are used
6 primarily for cover. In the case of the dense conifer,
7 it is used virtually year round; in the case of the
8 hardwood, it's used in all seasons of the year except
9 late winter. There is a derth of browse in these types
10 because there is virtually a complete canopy closure.
11 The only browse species that are growing there are
12 those that are shade tolerant.

13 Now, Mr. Chairman, I believe you asked a
14 question concerning the low residual category, whether
15 this is something that is engineered or is
16 happenstance. The low residual category generally is a
17 function of the harvest and merchantability of the
18 species that existed on that site; in essence, it is
19 the unmerchanable stems that have been left behind.

20 The biologist is cognizant of the fact in
21 reviewing plans for cutting that there will be a low
22 residual component on these sites after the cut, but
23 this is not something generally that is engineered by
24 the biologist, it's a function of the merchantability
25 of the stems on the site at the time of harvest.

1 What I would like to do now is go to the
2 Map 2s and try to demonstrate some of the concepts that
3 I have presented here with regard to home range size
4 and habitat quality. I am going to do that with the
5 help of this little device here, I am only sorry that
6 Mr. Hanna isn't here to see this, but what this is is a
7 moose habitat window. This is a small home range for
8 moose, this is drafted at a scale of 1:15,840,
9 represents 600 hectares, which is a small home range
10 for moose existing in good habitat.

11 Now, within this habitat window, you may
12 recall the evidence of Dr. Euler when he spoke about
13 the components that should be found in this window, and
14 briefly those components are: 10 per cent of the
15 landbase in spruce/fir greater than 20 years old, 10
16 per cent of the landbase in wetlands, 40 per cent of
17 the landbase in mixed wood forest greater than 20 years
18 old, and 40 per cent of the landbase in shrub or early
19 forest types less than 20 years old.

20 You can see that this obviously is a
21 square. It is one polygon to represent what is in
22 reality and in nature something that would not very
23 often look like this. In essence, the home range size
24 and shape for a particular animal is a function of
25 where those habitat components exist on the landbase.

1 This could be -- well, it could be any form, it could
2 be a circle, it could be a triangle. I chose a square
3 because it hopefully will enable me to make some
4 points. But in reality in the real world home range
5 configurations are a whole variety of shapes dictated
6 by where the habitat components exist on the landbase.

7 First let's look at English River with
8 regard to what is available with respect to some of the
9 cover types that I spoke of, and you can see by the
10 lack of colour here that there aren't a diversity of
11 cover types available. As Mr. Greenwood and Mr.
12 Kennedy have pointed out, this particular site after it
13 was cut was tramped in preparation for burning because
14 of a spruce budworm problem. So in essence what you
15 have here is all open clearcut.

16 I spoke to the importance of edge and its
17 importance in the context of moose is that the food
18 that is available now in this area is going to be
19 utilized when it's close to a cover component. The
20 only cover component that exists now is the uncut
21 forest that exists outside of the cut boundary. In
22 essence what that means is that the food that is going
23 to be utilized is roughly a strip 200 metres that runs
24 along the western boundary of the cut. The eastern
25 boundary of the cut, as you have noted, is water.

1 There is not a cover component there available.

2 So what does that mean with respect to
3 the way moose might utilize this particular site.
4 Well, if we take our little habitat window and
5 superimpose it on the cut, you can see that in the
6 category of shrub or early successional stages less
7 than 20 years old you have got a lot of it right there
8 (indicating), that is the food component, but there is
9 very little cover at least when we centre the habitat
10 window on the middle of that disturbance.

11 The way that moose would utilize this
12 particular disturbance is to utilize it much like this:
13 The edge of that disturbance would be utilized to
14 provide some of the food requirement, but a moose
15 generally would not have a habitat window that looked
16 something like this. The reason for that is that it
17 cannot utilize all of the food that is now captured in
18 that window because of its reluctance to venture far
19 from cover. A lot of this food really is not
20 available.

21 When you move the window like this
22 (indicating), recognizing the fact that they are not
23 going to use much of the food away from the edge, you
24 are going to capture the mixed wood component and the
25 cover component that are also basic requirements, but

1 with respect to the ability of this particular cut to
2 meet all of the food requirements, generally it can't
3 because a lot of that food is not close to cover.

4 Is the biologist concerned about that?
5 Might be if this kind of disturbance pattern, in
6 essence an open clearcut, was to be replicated across
7 the landscape over time. The biologist in reviewing
8 this particular plan would have seen, if you saw Map 3,
9 that this large cut shown here was an anomaly in the
10 context of the other cutting that was going on in that
11 same year by the same company, the other cuts
12 relatively small and dispersed by comparison.

13 THE CHAIRMAN: Mr. McNicol, if I could
14 interrupt you there, we will break for just 10 minutes.

15 Thank you.

16 ---Recess taken at 4:00 p.m.

17 ---On resuming at 4:10 p.m.

18 THE CHAIRMAN: Thank you. Be seated,
19 please.

20 MR. McNICOL: Mr. Chairman, while we are
21 waiting for Mr. Kennedy, perhaps I can clarify a couple
22 of points. The components and the percentages for
23 those components that I gave you, I believe Dr. Euler
24 when he first gave those gave ranges, and indeed they
25 are given as ranges, I gave in essence the midpoint in

1 those ranges. So it shouldn't be construed that we are
2 always looking for 10 per cent spruce/fir, 40 per cent
3 mixed wood, there is a range of values that are
4 adequate.

5 And with regard to your point on low
6 residual, I indicated that generally we do not engineer
7 those low residuals as a wildlife biologist, that is
8 not to say that that could not be done if that was
9 desirable for a particular species on that particular
10 site.

11 THE CHAIRMAN: Mr. McNicol, if you found
12 on that English River Forest example that there were
13 contiguous clearcuts of that, maybe not that exact
14 size, but close to that particular area, would you be
15 considering corridors through the clearcut so that the
16 moose could get to a cover or edge area?

17 MR. McNICOL: I will be addressing that
18 point just a little later, Mr. Chairman.

19 THE CHAIRMAN: All right.

20 MR. McNICOL: I would like next to apply
21 the habitat window to the Armstrong example, Map 2.
22 What you see here, just looking at it visually, you can
23 see that there is a lot more diversity on that site
24 after cutting than in the English River Forest after
25 cutting and silvicultural treatment.

1 I would point out the green area here
2 which in essence is unallocated forest. The lighter
3 green areas here are moderate residual areas, the
4 straight line residual areas that you see here are
5 actual corridors that have been prescribed by the
6 biologist. (indicating)

7 Remembering then that the amount of food
8 that is going to be utilized by moose in this
9 particular area is a function of cover, food available
10 on this site is much greater than was available on the
11 English River and that is a function of edge, and the
12 edge that has been created here is proximate to the
13 unallocated dense conifer in the vicinity of the
14 corridors that have been prescribed by the biologist
15 and around the periphery and throughout the moderate
16 residual cover type.

17 THE CHAIRMAN: What configuration do you
18 use for corridors if and when you take into account the
19 harvest of moose by hunting?

20 In other words, I am not a moose hunter,
21 but do moose hunters sit in a corridor and wait for
22 them to walk on by, or the way you configure a
23 corridor, does that increase the hunting pressure -
24 realizing, of course, they are controlled in terms of
25 numbers by calves and that kind of system - but does it

1 give the moose sort of a fighting chance, sporting
2 chance when you configure the corridors like that?

3 MR. McNICOL: Mr. Martel is shaking his
4 head, I think he believes it does. I will tell you an
5 effective way that I have seen corridors used by
6 hunters and that is in the early winter period when
7 there is enough snow for snow machines, if you get a
8 track heading into one of these corridor areas and you
9 know that that track does not come out, then you can be
10 very effective in terms of taking a moose.

11 This is a point that is often brought up
12 by companies and members of the public, you know, what
13 is the point of leaving these things if they in essence
14 become traps for moose. The point is that the habitat
15 that is being created here lasts more than one year or
16 two years, we are talking in this particular case a
17 habitat that would last 20 to 30 years.

18 At some juncture and on this site I would
19 suggest because of its mixed nature and good
20 productivity, lateral cover in the open clearcut areas,
21 these yellow areas, would grow to about six feet,
22 certainly the deciduous component, in about six or
23 seven years. That effectively produces a problem for
24 moose hunters, they can't see great distances and they
25 can't negotiate as they can after the area is freshly

1 cut. So it's a problem I would suggest for perhaps
2 five or six years after the cut. But after that, for
3 the balance of the time that this area is going to
4 produce good moose habitat, say 25 years, it isn't a
5 problem.

6 MR. MARTEL: Have you ever considered no
7 hunting for five years in those areas?

8 MR. McNICOL: As I know, you are aware,
9 Mr. Martel, with evidence our policy is that these
10 areas, all areas should be -- as many as possible
11 should be made available to the recreational hunter. I
12 know there are individuals both inside and outside of
13 the Ministry that believe that some of these freshly
14 cut areas should be closed for a certain period of
15 time, but our current policy is that they would remain
16 open unless there is some extenuating circumstances for
17 them to be closed to hunting.

18 Well, let's apply the habitat window and
19 let's centre it on this disturbance and see what we
20 have got. Captured within the window this time we have
21 in essence all of the components necessary to sustain a
22 moose on that cut-over area. You have the cover
23 component with regard to the unallocated deciduous --
24 sorry, coniferous areas, you have a mixed wood
25 component because of the moderate residual that has

1 been left on the site, you have a food component close
2 to cover. So in essence you have -- plus you have got
3 wetland down in the bottom left-hand corner, you have
4 all of the components necessary to sustain life on that
5 cut-over area. That is in contrast to what we saw in
6 English River.

7 It's important to recognize that this
8 habitat is dynamic, it's changing in time and at some
9 junction you are not going to have good moose habitat
10 here any longer because of crown closure, lack of food,
11 but for the present time and immediately after cut you
12 have got good habitat here for about 25 years.

13 Now, my last example was going to be Dog
14 River/Matawin. The Dog River/Matawin example, Map 2,
15 shares some of the characteristics with English River.
16 The one characteristic that is shared is that if you
17 look at the area in yellow there is not a lot of other
18 cover types available. So the amount of edge created
19 within the actual cut-over boundaries, as in English
20 River, is not maximized.

21 What is very different between the Dog
22 River/Matawin example and the English River example is
23 the configuration of the cut. You will note that this
24 is a very long irregular rectangular cut and what that
25 does is it maximizes the peripheral edge. This edge

1 here (indicating) is maximized because the area cut is
2 long and drawn out. That is in contrast to the English
3 River where it's blockish in configuration. So the
4 size of these individual clearcuts is smaller, the
5 amount of edge greater than in the English River
6 example.

7 If we apply the habitat window to the
8 centre of that disturbance area you can see that the
9 food component given by yellow, more of it available
10 because of the amount of cover close to the food
11 component. In the areas that are in white, the uncut
12 areas, there is a great deal of cover in the form of
13 conifer. There is a lack of mixed wood, there is a
14 lack of mixed wood throughout this immediate area. So
15 that is a limiting factor in the short-term for moose
16 utilizing this general area. The disturbance through
17 cutting is going to initiate on a lot of those sites a
18 mixed wood component much as a fire would do.

19 I would invite the Board at their leisure
20 to take my soon to be patented habitat window and apply
21 it to the photomosaic. It's at the same scale and you
22 can demonstrate for yourselves some of the messages I
23 have tried to convey here on a larger picture, the
24 contiguous cutting over the last 10 years.

25 THE CHAIRMAN: You realize if we make

1 that an exhibit that it wouldn't be patented, it will
2 be a public document.

3 MR. McNICOL: I submit, Mr. Chairman,
4 this is a tool not an exhibit.

5 What I would like to deal with hopefully
6 very briefly now is the application of the Moose
7 Habitat Management Guidelines and interim direction,
8 the magic 260 hectares that we have heard quite a bit
9 about in these proceedings, show you some real life
10 examples of how a biologist would apply the guidelines
11 and how the 260-hectare rule kicks in.

12 You will remember from previous evidence
13 where we have good carrying capacity for moose, good
14 productivity for moose, we are trying to apply the
15 guidelines such that the average size of cuts, some are
16 between 80 and 130 hectares, and cover-to-cover
17 distances are about 400 metres over most of the area
18 that is being proposed for harvesting in a five-year
19 period.

20 In areas that have a lower capability, do
21 not have the ability to produce the same number of
22 moose or hold the same number of moose, those
23 parameters are relaxed so cuts can become larger and
24 cover-to-cover distances wider.

25 Now, what reduces carrying capacity, what

1 reduces productivity? In essence it boils down to the
2 lack of the site to produce one of those critical
3 components and, in most cases, that component is the
4 mixed wood component. Areas that suffer from a problem
5 of drainage do not produce mixed wood areas over large
6 expanses and relatively infertile dry sites do not
7 produce large expanses of mixed wood. They have lower
8 carrying capacity for moose.

9 You will remember from the interim
10 direction that wherever a clearcut - and when I speak
11 of clearcuts now I am lumping the open clearcut and the
12 low residual category as one - so where open clearcuts
13 and/or low residual areas reach 260 hectares or more,
14 there has to be a silvicultural and biological
15 rationale given for the size of that cut, it has to be
16 rationalized.

17 Now, a biologist when he is presented
18 with a timber operating plan, a timber management plan
19 showing cutting over the next five years, does not have
20 benefit of these nicely coloured maps that are behind
21 us characterizing these give cover types scattered --
22 the residual cover types, low, moderate, heavy, but the
23 biologist is able to picture what these areas are going
24 to look like after the cut.

25 By drawing from the information presented

1 allocation and the biologist knows that the company is
2 only interested in harvesting conifer, he knows that a
3 certain portion of that stand is going to be left
4 behind.

5 Since FRI generally categorizes stands,
6 if the biologist is interested in the distribution of
7 that residual, it's necessary only to look at
8 photographs -- the aerial photographs for him to
9 determine where that residual component is going to
10 exist after cutting. The biologist must also be aware
11 of what the probable silvicultural treatment on that
12 site is after the cut and that has relevance, Mr.
13 Chairman, to your point on the English River which I
14 will get to shortly.

15 Let's look at the examples that we have
16 just discussed and see how the biologist viewed those
17 areas as he was making input.

18 Now, the Dog River/Matawin example, all
19 of this area in yellow, showed up in the allocation.
20 (indicating)

21 These stands were 90 to 100 per cent
22 conifer, spruce and pine. Biologists knew that the
23 company cuts spruce and pine, knew that these areas
24 would be open clearcut or low residual. Both of those
25 categories, again, in his mind, same thing with regard

1 to application of the Moose Habitat Management
2 Guidelines.

3 What is the carrying capacity of this
4 particular area for moose? Well, it's moderate, it's
5 not excellent because of that missing mixed wood
6 component that I spoke of earlier. What the biologist
7 is most concerned about now is the size and
8 distribution of these clearcuts. He looks at this
9 yellow area here, again this would all show up as
10 allocation, this area was unallocated as was this, this
11 area too is unallocated. (indicating) He would look at
12 this yellow area here and determine the size of that,
13 that size is 122 hectares. This is the largest open
14 clearcut area on this particular map sheet.

15 In total, the open clearcut and low
16 residual categories on this entire map sheet are 874
17 hectares, but they are broken by unallocated stands at
18 these points here - and, again, what we are looking at
19 is the cover-to-cover distances - wherever 400 metres
20 from cover-to-cover is violated, that area then becomes
21 one clearcut. So this clearcut is broken from this
22 clearcut by this narrowing here. (indicating)

23 What that means for moose is that the
24 moose can utilize the periphery of this unallocated
25 dense conifer all the way around, use more food and

1 traverse this disturbed area within the cover. The
2 same is said here. (indicating)

3 If we move to the English River example,
4 the biologist knows that these stands too are conifer
5 dominated, spruce and fir. He also knows that there is
6 a budworm problem in here.

7 Mr. Chairman, you suggested that a cut of
8 this size perhaps could be broken with a corridor and
9 indeed that could have been done, but not in this
10 particular example. The problem here is the budworm,
11 any corridor that was left there, given that most of
12 these stands have a balsam/fir component or are
13 balsam/fir working group, they would be dead or dying.
14 So with regard to cover value, there would be no cover
15 value left.

16 The biologist recognizes that this area
17 is budworm susceptible, indeed budworm is in there and
18 currently killing balsam/fir, maybe concerned about the
19 size of this but, in the long term, remembering that
20 range is dynamic, the silvicultural treatment here
21 takes precedence over any concerns with regard to moose
22 habitat. He also has this knowledge, the fact that the
23 other cutting that is occurring in that area, small
24 dispersed, going to create good moose habitat, the loss
25 of this particular area in the short term is not of

1 concern.

2 The Armstrong example. The biologist
3 here again knows that the company is cutting
4 exclusively conifer, the stands to the west of the
5 unallocated portion here (indicating) shown in green
6 are 90 to 100 per cent conifer. The biologist knows
7 that this area is going to be open clearcut after they
8 harvest. In recognition of that, and knowing that this
9 area has got good carrying capacity for moose, he has
10 broken this clearcut with cover patches here
11 (indicating) presented by corridors to maximize the
12 amount of this open clearcut that can be utilized for
13 food.

14 THE CHAIRMAN: Mr. McNicol, in order to
15 get yourself out of the 260-hectare rule - and that's
16 done, as I understand it, by rationalization -- by
17 putting forward the rationale for going beyond what the
18 rule stipulates - can you use a rationalization that is
19 other than related to wildlife?

20 In other words, you indicated there that
21 you are going to rationalize it on the basis of the
22 silvicultural treatment because of the spruce budworm.
23 That still may not be good for moose. Were there other
24 areas that have been clearcut much larger, say, also
25 beyond the 260 hectares and also affected by spruce

1 budworm, would that allow you to cut all of them,
2 realizing that by doing so you are effectively ruling
3 out that whole area as habitat for moose, and just
4 saying to yourself: Well, they will have to go
5 elsewhere.

6 The alternative to that is to not cut,
7 but at least during the time that it takes for the
8 spruce budworm to completely wipe out all of the
9 standing timber, which may be some time, the moose
10 would still be able to utilize it as a habitat.

11 What's the rationale? Does it have to be
12 related to wildlife or can it be related to any other
13 consideration, excluding a wildlife consideration?

14 MR. McNICOL: Both considerations are
15 important and both are asked for, the biological and
16 silvicultural rationale for the size of those cuts.

17 In the English River example, the
18 biologist could have indicated that in this particular
19 situation the biological rationale was that the cover
20 was dead or dying, anything that was left there at this
21 juncture would lose its ability to provide what it was
22 left for over a relatively short period of time given
23 the level of infestation of that area, thus, and
24 remembering that habitat is a dynamic thing, let's get
25 it back into a cover component as soon as possible,

1 tramped and burned.

2 THE CHAIRMAN: So you sacrifice it in the
3 short term?

4 MR. McNICOL: In the short term, yes.
5 But your point is a good one and there are examples of
6 this, where you have relatively large areas that are
7 affected by spruce budworm.

8 What I have done in exactly those same
9 situations is look for the budworm areas -- sorry, the
10 stands that are least affected by budworm and in the
11 conifer context, generally, lowland black spruce are
12 less susceptible to budworm than upland black spruce,
13 white spruce and balsam/fir. So to try to provide some
14 cover component on those sites, I direct my attention
15 to those lowland black spruce sites in a budworm
16 infested area and that is done elsewhere.

17 When assessing the size of these cuts,
18 the biologist obviously was concerned about the size of
19 this one (indicating), projected it accurately because
20 it would be open clearcut, and prescribed corridors
21 accordingly to meet the guidelines.

22 MR. MARTEL: That corridor, the one in
23 the middle roughly.

24 MR. McNICOL: This one here? (indicating)

25 MR. MARTEL: No, up more.

1 MR. McNICOL: This one. (indicating)

2 MR. MARTEL: Could you have made it
3 somewhat better for the moose if you had run that
4 corridor right across?

5 MR. McNICOL: Yes.

6 MR. MARTEL: As opposed to leaving it
7 hang out there where there is only one avenue of escape
8 for him?

9 MR. McNICOL: Yes, you could have. There
10 is an access corridor through here (indicating) so
11 there would have been a break, as there is
12 here (indicating) but, yes, you could have narrowed that
13 and provided a more or less continuous cover from the
14 west side to the east side, yes, as has been done here
15 and here. (indicating)

16 MR. MARTEL: Either that or provide the
17 moose with a gun.

18 MR. McNICOL: With respect to the type of
19 cutting pattern that a biologist would be looking at
20 over time, I would suggest that in the examples given
21 the biologist would be looking for a kind of cut
22 pattern in the forest that nature has provided here
23 (indicating) in the Armstrong example as ideal. If you
24 remember the habitat window after disturbance, and
25 given the species demand by the company, you had

1 excellent moose habitat there almost immediately given
2 the cut-over.

3 The biologist would not be looking for a
4 replication of, except for extenuating circumstances
5 such as budworm, the English River example. The Dog
6 River/Matawin example is a good one, it shows how open
7 clearcut, when it is given in this kind of
8 configuration, can maximize edge and the food component
9 that is available through the open clearcut.

10 And I think I'm done.

11 DR. ABRAHAM: Mr. Chairman, in addition
12 to the featured species like moose, the Ministry is
13 responsible for the stewardship of all other wildlife
14 species. What I am going to do over the next few
15 minutes is to look at the results of this exercise from
16 that point of view and ask the question: What are the
17 facts and the implications for species of wildlife
18 other than moose that can be drawn from this exercise.

19 In simple terms, clearcutting causes the
20 reversion of the forest from later successional stages
21 to earlier successional stages. We know that in the
22 forest ecosystem the inter-relationship of vegetation
23 communities represented by different successional
24 stages is a key determinant of the wildlife communities
25 that will be present in the forest. For any given

1 successional stages there will be many species which
2 are characteristic of that successional stage and
3 compose a community of wildlife species. Many of the
4 species will occur in several successional stages, will
5 thrive in some and do not so well in others, but still
6 exist at lower levels.

7 Our principal concern then is that the
8 management objectives are being met or likely to be met
9 by the conditions created by the clearcut silvicultural
10 system and our focus here would be at a broad level and
11 a broad management scale, and our objective is a
12 qualitative one; and, that is, to maintain viable
13 populations over the large area and over a long period
14 of time.

15 The question about the clearcut
16 silvicultural system in terms of other wildlife is:
17 How does it differ from and how is it similar to the
18 natural boreal forest that the species have adapted to
19 over a long period of time? And of special importance
20 is the spacial extent and the duration of time over
21 which the disturbance caused by the system will exist
22 and how that will affect the vegetation community
23 mosaic that exists in the current and future forest.
24 These factors will determine the extent to which the
25 habitat needs for a range of species are considered.

1 There are a large number of species
2 involved and, obviously I have to take a different
3 approach from Mr. McNicol, I can't talk about each
4 wildlife species in a case like this, so I have taken a
5 community approach and I will be illustrating this in
6 the context mainly of the Dog River/Matawin Forest.

7 If I can refer you for a minute to the
8 key map, Map No. -- the key map for the Dog
9 River/Matawin Forest, it is the Dog River/Matawin FMA
10 general area which I am going to refer to in the first
11 few minutes to establish some facts about wildlife for
12 that area. And please note that if I were doing this
13 as a wildlife biologist, making input to management
14 plans, I would obtain the information that I am going
15 to give you today from several sources, including a lot
16 of local field experience.

17 For my purpose today, as it is, I have
18 established the facts through a great deal of reading,
19 through looking at the exhibits provided for the
20 exercise, I have talked to people from the local area
21 to gain some knowledge from perspective, and I have
22 made one site visit to the area to gain some personal
23 experience with the area.

24 First, I would like to set the management
25 context for wildlife habitat. In this area, in this

1 forest, the featured species for wildlife habitat
2 management over a broad area is moose, as you've heard.
3 As the practising wildlife biologist I would accept the
4 assumptions of the featured species management with
5 regard to its provision of habitat for the majority of
6 other wildlife species.

7 So as a biologist making input then I
8 would mainly be concerned with any species concerns of
9 special circumstance; for example, those that would
10 have been highlighted by a public concern, those for
11 which information exists, a special need is present, an
12 endangered species, for example. And in order to tell
13 you about the wildlife that are present here today, I
14 am going to just give you some brief comments about the
15 types of species for which some uncertainty does exist.
16 I am going to focus on that 30 per cent which Dr. Euler
17 and others have referred to throughout the proceedings.

18 First of all, though, the scientific
19 literature that's available and in general for this
20 area tells me that there are over 200 vertebrate
21 wildlife species. There are several thousand
22 non-vertebrates including plants in this area. The
23 uncertain, they are the species for which there is
24 uncertainty, number about 37 and I base this on, again,
25 the literature and work of Dr. Euler and Dr. Baker and

1 other's of my colleagues.

2 For the exercise today, I did determine
3 for myself which of those 37 species were present in
4 the Dog River/Matawin FMA, the larger area; not the
5 single annual cut represented on Map 2, but the larger
6 area represented by the key map.

7 There are, as I say, 32 species and my
8 focus in the next few minutes will be about the habitat
9 needs of those 32 species and the extent to which
10 habitat management for moose, according to the
11 guidelines that we have, would provide for those
12 species.

13 To begin with an obvious one, the
14 endangered species that might be present on the area,
15 there is only one, it is the bald eagle. There are
16 none, no bald eagle nesting sites on the Map 2, the
17 single annual cut. There are documented bald eagle
18 nesting habitats -- nesting sites on the Dog
19 River/Matawin FMA. They are not represented in any of
20 the FMA -- or any of the exhibits that we have today.

21 But to deal with bald eagles then, the
22 endangered species, we would manage their habitat needs
23 specifically according to resource manuals that the
24 Ministry has for that purpose.

25 Moving on to another category. There are

1 two sensitive -- there are two species sensitive to
2 human disturbance that are present on the larger Dog
3 River/Matawin FMA. Again, they are not present on Map
4 2, so you will see no examples of specific management,
5 but where they are encountered on the area we would
6 have specific management according to the resource
7 manuals that the Ministry maintains for that purpose.

8 The third category are snag-dependent
9 species of which there are 13, including 9 birds and 4
10 mammals. I should mention the sensitive species to
11 human disturbance are osprey and great blue heron.
12 Moving on to the snag-dependent species, the 9 birds
13 and 4 mammals, I won't list these individually, but
14 most of them are primary cavity producers, are those
15 that produce cavities like woodpeckers, those that use
16 cavities produced by woodpeckers, for example, blackcap
17 chickadees, trees swallows and so forth. Most of these
18 are common species in the area of the Dog River/Matawin
19 FMA. One of them is on the northern mixed wood range,
20 that's the eastern bluebird.

21 I would want to assure myself that the
22 forest following harvest in this area, there would
23 be -- in this forest there would be enough current
24 cavity or snag trees and enough potential snag trees to
25 supply these species into the future, and I believe

1 that armed with a local knowledge about the way
2 harvesting and subsequent timber management activities
3 are taken -- are occurring in this area that I would be
4 able to make that -- come to the conclusion. It would
5 be possible for me to assure myself of that, and you
6 will see some examples of this in the slides that will
7 follow my presentation.

8 The fourth and final category are the
9 area sensitive species of which there are 16 present on
10 the larger Dog River/Matawin FMA, 14 birds and 3
11 mammals. What we know about the species and their
12 habitat requirements, specifically the minimum area
13 requirements of these species, well, we know it is
14 chiefly from outside of Ontario and some information
15 from in Ontario, but the information suggests that most
16 of them have minimum area requirements well below the
17 130 or even the hundred hectare cut or leave areas that
18 will be created by the application of the moose
19 guidelines.

20 For 6 species we need to gather more
21 information. Their area needs are larger than the
22 others and to see if the moose guidelines will provide
23 habitat over the long term, we would need more
24 information.

25 Briefly, the way I've looked at things

1 here, going through the uncertain species, is analogous
2 to the way Dr. Euler explained in Panel 16, that at a
3 provincial scale will be done during the population
4 monitoring program and the other wildlife effectiveness
5 monitoring program, the scoping workshops that will be
6 carried out for those, it is analogous to that process.

7 Now, I would like to look at the Dog
8 River/Matawin single largest area cut for 1987/88, the
9 Map 2 for Dog River/Matawin.

10 Briefly, my first reaction to the cut is
11 to look at pattern. Mr. McNicol pointed out the long
12 narrow pattern of the cut. My eye is drawn to the
13 interspersion of the categories of post-harvest
14 vegetation. And my first reaction is that there is a
15 good interspersion of those post-harvest categories,
16 that there was small to large, well distributed, a
17 variety of sizes throughout the cut.

18 A quick analysis of the numbers suggest
19 that about 45 per cent of the total single annual cut
20 is in open clearcut, another 15 per cent in low
21 residuals and moderate residuals, so that leaves about
22 60 per cent of the area in the single large cut which
23 have been harvested and have been disturbed to some
24 extent. The remaining 40 per cent, which is a fairly
25 large component, is undisturbed, the green being the

1 unharvested forest and some of the other colours
2 representing unique habitats are less -- other habitats
3 that would contribute to the diversity; tree bogs,
4 muskeg and riparian areas that are undisturbed.

5 I would like you to recall that viewing
6 this in terms of other wildlife at this scale I'm
7 not -- well, I'm not dealing with stability of
8 populations - most vertebrate populations span a much
9 larger area than is represented in Map No. 2 - rather,
10 I'm concerned with the number and different kinds and
11 sizes of vegetation communities that exist and their
12 interspersions and the availability of these things that
13 are available for the animals themselves to integrate
14 as habitats.

15 Now, briefly I would like to move on and
16 ask the question: What we can expect in terms of
17 wildlife in the various post-harvest categories that
18 Mr. McNicol alluded to earlier. Again, my focus here
19 will be communities, there will be some descriptive
20 features about each in terms of habitat and species,
21 and I will be providing examples when we get to the
22 slides immediately following my presentation.

23 In the open clearcut post-harvest
24 category I expect fewer species than in a pre-cut or
25 uncut forest at this location. The number of species

1 of birds and mammals that I have been able to ascertain
2 from the literature that would be present -- could be
3 present is about 30. That might seem relatively high,
4 I will compare it later, but the essence of this
5 post-harvest category is that it has got a relatively
6 simple structure in terms of vertical structure and
7 diversity and in terms of horizontal structure
8 diversity and what it presents for wildlife.

9 Obviously, that's going to favour ground feeding and
10 ground nesting species and, to some extent, it will
11 favour those species of predators which capitalize on
12 those ground-living animals.

13 In terms of numbers of animals, let's
14 look at birds first. Compared to the uncut or the
15 pre-cut forest in that site, the numbers will be
16 moderate and in some cases low depending upon what
17 species were present, what the stand condition was like
18 before. For mammals, research has indicated for small
19 mammals, in the size category of rodents, mice and
20 voles, the research has indicated that the density is
21 compared -- an open clearcut compared to pre-cut or
22 uncut harvest will be relatively similar, can be
23 relatively similar. In fact, there might even be some
24 increases; other cases there might be some decreases,
25 but generally the range is in the same as pre-cut.

1 The difference is in the number of
2 species present, not necessarily the density when it
3 comes to small mammals, and that depends primarily on
4 what happens to the site post-harvest and the inherent
5 productivity of the site, as Mr. McNicol referred to
6 for moose. For example, scarification, tramping might
7 reduce the ground layer complexity for a year or two.
8 In other conditions scarification, by building up wind
9 rowing, might create a little bit more structure at
10 that level.

11 THE CHAIRMAN: Dr. Abraham, what is the
12 tendency of -- let's take birds as the example. What
13 do birds do when an area is clearcut; would they move
14 to the next adjacent habitat that was similar to what
15 was cut in very short term?

16 I understand that they may not come back
17 to nest in the area that was clearcut, they have other
18 requirements, but what will the physical population of
19 the mammals and birds that were there, where will they
20 go immediately after cut?

21 DR. ABRAHAM: Okay. For clarification,
22 do you mean within the season that it's cut?

23 THE CHAIRMAN: Yes.

24 DR. ABRAHAM: Okay. So if they were
25 migratory birds, for example, they would be there

1 and...

2 THE CHAIRMAN: Until they headed south or
3 wherever they go.

4 DR. ABRAHAM: Okay. There have been a
5 number of what are called removal studies in terms of
6 vegetation. In general, I would preface the answer by
7 saying that it depends on the species. If a species is
8 one such as a white-throated sparrow which maybe has
9 its optimum habitiat in relatively open canopy, full
10 mixed forest but can exist in earlier successional and
11 later successional stages, if it is a species like that
12 that's resilient, within the season then probably the
13 individual animal will probably remain on that
14 location, particularly if it is the breeding season and
15 they have territorial attachments.

16 Then, you know, if they are migratory
17 they will leave, they may not come back, there will be
18 some migration - some then die - coming back even in
19 one or two years post-removal of vegetation in some
20 species, they will maintain a territory, they may be
21 less productive in that habitat.

22 For others, I'm sure there will be
23 mortality related to it, an analogy to an agricultural
24 situation like where ducks may be ground-nesting
25 species, their habitat is removed, even though the nest

1 might be spared, predation might expose -- they might
2 be exposed to predation with their nest removed and the
3 individuals killed or if the individuals aren't killed
4 they would lose their attachment to the site. Changes
5 in the physical structure of the site which individuals
6 are used to, can lead to a variety of responses.

7 THE CHAIRMAN: They just don't move on to
8 the area that wasn't cut adjacent?

9 DR. ABRAHAM: No. I would say within the
10 year of cut that's not likely to happen. Over a year,
11 a span of a year, an individual surviving and coming
12 back and looking for -- prospecting for that type of
13 habitat might well relocate to an adjacent habitat of
14 similar areas -- or similar characteristics to the one
15 it occupied before.

16 Okay. The last point about this open
17 clearcut category, as Mr. McNicol pointed out, is that
18 it will undergo some relatively rapid changes in
19 structure, and I just recall that it is a very short
20 point in time at which we are looking at each one of
21 these categories.

22 Moving on to low residual as a category,
23 structurally there will be the addition of mature
24 residual trees and the range is from 10-30 per cent
25 canopy. Now, that's going to probably add some

1 species, species that are dependent or require trees
2 for nesting, trees for foraging and that will probably
3 add a few species. My research or my background
4 research for this did not indicate to me that there
5 would be much difference from the open clearcut.

6 Then moving on to the moderate and heavy
7 residual areas. Again, I am going to lump them. I
8 didn't find a difference. The number of species is
9 increased over the open clearcut and low clearcut, and
10 now we are talking 30 to 50 birds and mammals,
11 primarily because of the increased complexity of the
12 micro-environments that are available, there is more
13 vertical and horizontal structure and more available
14 types of areas or niches for the animals to occupy.

15 Then we have the undisturbed communities
16 from riparian areas to fens to other wetlands, they are
17 found within and between all of the cut-over
18 categories, as is evidenced by Map 2, and they are
19 going to contribute to and, in some cases, provide the
20 sole habitat for some species, but often these areas
21 contribute to a component of the habitat requirements
22 for the species that nest or live in the mature forest
23 or other successional stages.

24 And throughout these -- this brief
25 comparison I have compared things to the pre-cut and

1 the uncut forest. The obvious point that I'm trying to
2 draw you to is that there will be differences in the
3 wildlife species on the different sites following
4 harvest, but it's not a simple change and it is not one
5 directional. The removal of mature trees obviously
6 will decrease the value of that area to mature forest
7 wildlife, but other species can and will invade and
8 even increase in the resulting habitats.

9 In conclusion, I would like to sit back
10 and put this into a broader perspective, much as I
11 would as a provincial biologist or a manager or I would
12 as a local wildlife manager making input to plans but
13 interested in the bigger perspective and the direction
14 that my organization is going.

15 And here again I would like you to recall
16 that for other wildlife we are concerned with the
17 provincial scale of management, we are talking about at
18 this point qualitative objectives; that is, to maintain
19 viable populations, to not allow declines in species
20 populations as a result of our activities. And my main
21 concern is that there's an adequate amount of land in
22 all of the stages of succession over a broad area and a
23 long time period.

24 When I look from Map 2 and Dog
25 River/Matawin, the single cut, to either Map 3, the

1 contiguous or the photomosaic, I see in general the
2 same kind of diversity that exists on the single cut.
3 And I might say that, if anything, the application of
4 the moose guidelines as they currently exist - which
5 were not in existence for the full length of the
6 contiguous, the 10-year cut - that, if anything, there
7 will be more diversity created in the future in a site
8 similar to this.

9 And, finally, I would like to look again
10 at the landsat image that I asked you to look at during
11 the break.

12 All right. To recap, this area is about
13 120 miles wide, similarly long. To orient you, the Dog
14 River/Matawin mosaic is here. (indicating) There are
15 16 cover categories represented here and the purpose of
16 this mapping was forest fuel mapping for the local --
17 for the regional fire organization. So the categories
18 that you saw here were things like dense coniferous
19 forest, open coniferous forest, mixed and so on.

20 I would like to draw your attention to
21 five features that I think you can see from your
22 location. The first is the family of colours that are
23 green, the dark greens to the middle greens. These are
24 deciduous forest categories. They represent -- they
25 move from dense to mixed forest dominated by deciduous.

1 So that's the greens.

2 The orange, red, yellow family of colours
3 is the coniferous forest, again ranging from dense to
4 mixed dominated by conifer.

5 The other three colours that I would like
6 you to look at are the browns which represent recent
7 burns and this is in a period -- in a management regime
8 where fires are suppressed. The pale gray, which
9 represent recent cut-overs; that is, cut-overs less
10 than 10 years old, and the middle colour of purple
11 which represent cut-overs that are greater than 10
12 years old and still distinguishable as cut-overs; that
13 is, their vegetation has not reached the point where
14 they are giving a reflectance to the satellite, typical
15 of one of these forest categories.

16 I am interested in the scale and the
17 distribution of the various disturbances, and let's
18 start with burns. Here is a recent burn, there are
19 three represented on this map area, here is another one
20 and here is a relatively large one. (indicating) They
21 go -- they range in size from about a six-mile township
22 to several of those townships. There are relatively
23 few and there is not much you can say about the
24 dispersion of them across the landscape because they
25 are so few.

1 I would like you to compare that scale of
2 size to the pale gray recent cut-overs, and the first
3 thing I think you will notice is that there are a lot
4 more areas of pale green scattered across a wide
5 portion of that landscape and, in general, they are
6 smaller than even the smallest of the recent burns.

7 What that means to me is that in terms of
8 the extent, the spacial extent of human disturbances
9 compared to the major natural disturbance factor in
10 them in the boreal forest over its development period,
11 fire, that those -- the scale of human disturbance is
12 smaller but more well dispersed and, in a sense,
13 probably replaces fire in the presuppression era.

14 When we look at purple, which is the
15 older cut-overs; that is, everything cut-over over 10
16 years old, we can see that, again they are well
17 dispersed over the landscape, several areas of purple,
18 and even the largest is not quite as large as this one
19 recent burn. So, again, the only point here is the
20 scale of the human disturbance is in that same range as
21 the scale of a major natural disturbance factor.

22 And then stepping back for the final
23 look, I would say that -- and with the knowledge that
24 this area represented in here, much of this area has
25 been subject to timber harvest and activities over

1 several decades, that I see here a level of
2 interspersion, interspersion of vegetation communities,
3 which brings me to a general level of comfort about the
4 availability of many of the wildlife vegetation
5 communities which would provide habitats for the
6 majority of wildlife species in the boreal forest.

7 I acknowledge that there is this
8 uncertainty which we have spoken to many times, and I
9 also acknowledge that the Ministry has engaged on
10 efforts to resolve some of that uncertainty in its
11 provincial monitoring program.

12 Thank you, Mr. Chairman.

13 THE CHAIRMAN: Thank you.

14 MS. MURPHY: Mr. Chairman, the witnesses
15 would like to show you the photographs that were taken
16 of this area and to illustrate some of the points that
17 they made in their evidence-in-chief by showing those
18 to you on those photographs.

19 I expect that it would take us probably
20 close to an hour to go through the photographs and to
21 finish this section. I would suggest that we do that.

22 If you were planning to sit until six
23 o'clock, we could probably finish up by close to six
24 o'clock.

25 THE CHAIRMAN: Okay.

1 MS. MURPHY: Okay.

2 MR. FREIDIN: Mr. Chairman, we won't have
3 any problem finishing tomorrow. I am only going to be
4 about half an hour and cross-examination looks like it
5 wouldn't go any more than three hours at the outside,
6 so we can even start at a reasonable hour tomorrow and
7 finish at a reasonable hour.

8 THE CHAIRMAN: Very well.

9 MR. CASSIDY: Can we make submissions on
10 what is a reasonable hour for the start time tomorrow?

11 THE CHAIRMAN: Anything after 7:00 a.m.
12 is reasonable by this Board.

13 MR. CASSIDY: Is it negotiable?

14 MR. MARTEL: Do you want to suggest a
15 time?

16 MR. CASSIDY: Sorry?

17 MR. MARTEL: Do you want to suggest a
18 time?

19 MR. FREIDIN: 8:45.

20 MS. SEABORN: Mr. Freidin is suggesting
21 8:45. We haven't had that start time before.

22 MR. CASSIDY: I'm for it.

23 MR. MARTEL: What about re-examination?

24 MS. MURPHY: Well, as Mr. Freidin says,
25 we will certainly be able to finish tomorrow by three

1 o'clock whatever. I have done re-examination to meet
2 plane schedules before.

3 THE CHAIRMAN: So if we start at eleven
4 o'clock in the morning, you will still be okay?

5 Well, I think we will probably start
6 somewhere around 9:00 tomorrow, that should give us all
7 enough time. If it looks like we are getting close to
8 the wire, we will take a 45-minute lunch hour or
9 something.

10 MS. MURPHY: Then, if I can draw your
11 attention to the witness statement, first of all, as
12 has been noted to you before, on page 69 there is a
13 map. On that map it indicates for you the location in
14 which the photographs were taken.

15 I would also advise you, if you go over
16 the page, starting at page 71, we have descriptions for
17 each of these photographs and the witnesses will not be
18 going through the descriptions that are in this
19 document. They will be referring to the photographs by
20 number, and then the witnesses will be providing some
21 further information that illustrates the
22 evidence-in-chief.

23 MR. GREENWOOD: Mr. Chairman, we are
24 going to take you on a visual site visit using the
25 slides. I just thought I would show you on the

1 photomosaic where we are going to go.

2 We are going to be starting in the upper
3 right-hand northeast corner on the photomosaic, moving
4 through the - sorry, through the contiguous cut -
5 moving through the contiguous cut as it's mapped in a
6 generally southwestern direction, western direction,
7 and end up over in the single largest clearcut that was
8 mapped in the 87/88 area on the west side.

9 MR. FREIDIN: Rich, do you want me to put
10 the back lights on so people -- I don't know whether --
11 the Board will want to be able to write perhaps, but it
12 would certainly be clearer if we can turn off this
13 middle light and put the back light on.

14 MR. GREENWOOD: We will give that a try.

15 MR. FREIDIN: Can we try that, Mr.
16 Chairman?

17 THE CHAIRMAN: (nodding affirmatively)

18 MR. GREENWOOD: Mr. Chairman, we have
19 spoken an awful lot about features and factors and we
20 have tried to describe them as best we can on the maps.
21 We are using these photographs to demonstrate some real
22 life. We hope to speak to a lot or illustrate a lot of
23 those factors that we have already described within the
24 next hour.

25 As was seen on the photomosaic,

1 clearcutting creates a pattern, a pattern of open
2 areas, a pattern of partially open areas. The lights
3 unfortunately are interfering a little bit with an area
4 over here. Patches of standing timber, lineal strips
5 of standing timber, even peninsulas, or what I am
6 calling peninsulas of standing timber.

7 In terms of timber management, a clearcut
8 is any area which has been harvested using the clearcut
9 silvicultural system. For the purposes of this slide
10 then, all of the area in the foreground would have been
11 recorded as clearcut, assuming that those patches or
12 peninsulas had all the merchantable timber removed and
13 that the regeneration was not considered free to grow.

14 MR. McNICOL: As I have indicated from a
15 moose habitat standpoint, the value of one cut-over
16 area to another is a function of the shape and size of
17 the cut-over area and the distribution, size and type
18 of the residual trees or groups of trees within that
19 cut-over area.

20 DR. ABRAHAM: The principal things that I
21 would be looking for here are habitats available
22 obviously. If there was other species, the species
23 that I would see or the types of habitats which are
24 best illustrated in this picture are the lineal
25 riparian areas along the lakeshore, and a little bit on

1 the left there.

2 And the species that I would expect to
3 find here along the shore would be kingfishers, the
4 residual timber along the lakeshore would provide
5 potential nesting habitat for ospreys, depending on the
6 beach, spotted sandpipers, and aquatic furbearing
7 species like mink and muskrat and throughout there
8 would be other species, but I will refer to them later
9 in other photos.

10 MR. GREENWOOD: Now, clearcutting, as we
11 have also shown on the individual maps, can result in
12 very little to all of the forest canopy being removed,
13 very little in an area such as this, to all of that
14 forest vegetation being removed. (indicating) For
15 timber management purposes, all of this area would be
16 considered clearcut and has been mapped so on the
17 contiguous clearcut for the Dog River/Matawin area.

18 Now, the categories that have been used
19 to classify those residuals would not be used by a
20 forester. The degree of residual would be related more
21 to the ease and the cost of silvicultural treatment as
22 well as considerations regarding accruals for FRI
23 purposes.

24 There are also differences in the amount
25 and height of ground vegetation. You can see some

1 areas being fairly white here, other areas adjacent to
2 it showing dark, and these again vary across the site
3 after harvesting by clearcutting.

4 MS. MURPHY: And you are looking at
5 photograph No. 2 there?

6 MR. GREENWOOD: Yes, photograph 2.

7 DR. ABRAHAM: And the only point I would
8 like to make about this is the degree and the amount of
9 mixed forest that is left and that mixture provides
10 habitat for those species seeking early -- or sorry,
11 late -- mid to late successional stages in the forest
12 community.

13 MR. GREENWOOD: This is photograph No. 3.
14 The light is affecting us somewhat here, I am not sure
15 whether the Board and the other people, it may just be
16 our angle. Can you see the features that we are
17 pointing out? That is fine, as long as you can see it,
18 we are getting a little reflection.

19 One of the factors that I mentioned was
20 topography and the fact that topograhly affects site
21 and, therefore, species on an area. In this particular
22 area we can see four different topographical features
23 and, therefore, sites: an area of lowland, this is an
24 organic site; an upland area or at least higher than
25 the lowland, it's also relatively flat, it's a

1 glaciofluvial or waterlain sand; upland rolling hills,
2 representative of tills which have been dumped by
3 glaciers, unsorted; we also have an area off to the
4 right which is relatively steep, and this either could
5 be bedrock controlled area or just the shape of the
6 tills that were dropped.

7 Now, those differences in site are also
8 reflected in differences in species and, therefore,
9 residual left on the site following harvesting.

10 The lowland area has had black spruce on
11 it, pure black spruce, the harvesting in that area has
12 left no residuals but there is also been patches of
13 unmerchantable black spruce left behind.

14 The glaciofluvial has no residuals.
15 Being a relatively uniform site and a relatively dry
16 site, it will have supported a near pure jack pine
17 stand. And the upland sites which are unsorted and
18 contain soils and fine materials and, therefore, are
19 slightly richer have supported a mixed wood forest
20 which has resulted in various degrees of residuals
21 being left throughout that site.

22 MR. McNICOL: This vegetative mosaic will
23 be used by moose at different times of the year for
24 different purposes. This uncut area here (indicating)
25 mixed wood as Mr. Greenwood pointed out, inoperable,

1 can be used for food and cover for all seasons of the
2 year except late winter. Food within this mixed wood
3 stand and food along the periphery of the edge will be
4 used by moose.

5 The area up here (indicating) is also
6 mixed wood but it has been partially cut. This is a
7 very good area for moose for all seasons of the year
8 except late winter. Food and cover in close proximity.

9 The area here (indicating), the uncut
10 dense conifer would be used in summer or winter for
11 thermal regulation and also for lower snow depths.
12 Dense canopy here (indicating) intercepts snow. When
13 you have got deep snows in the surrounding open areas,
14 these areas are easier for moose to move through and
15 utilize as cover while using the browse that exists in
16 the open clearcut area around it.

17 DR. ABRAHAM: Without specific reference
18 to any particular feature in here, this is an exciting
19 site for other wildlife because it's got so many
20 different kinds of soil types, vegetation communities
21 that are going to come up; pure pine in the middle, the
22 lowland black spruce -- sorry, in the middle, the mixed
23 forest on the right and imagine this with a
24 regenerating forest all around those patches of mature
25 timber, and you get a sense for the interspersed and

1 the vegetation community mosaic that I was talking
2 about on a very fine scale for other wildlife and this
3 is a good spot.

4 MR. GREENWOOD: Photograph No. 4. Again,
5 we are looking across site types. These ones are
6 relatively large and uniform. In the foreground at the
7 bottom of the photograph we have an organic site
8 supporting uncut black spruce. Just above that we have
9 again a relatively uniform site, another sand outwash
10 and behind it a till again. (indicating)

11 These three sites have supported three
12 types of vegetation which have resulted in three
13 different degrees of residual following harvesting.
14 Black spruce being uncut, if it was an unmerchantable
15 stand it would be classified possibly as clearcut
16 depending on its relation to other existing stands and
17 its size with respect to the eight hectare or FRI
18 minimum standard.

19 The glaciofluvial area would have
20 supported a pure jack pine stand and does not have any
21 residuals on it. The green colour, however, is
22 regeneration, another pure jack pine stand.

23 The richer upland till. The gray that
24 you can see in that stand is residuals uniformly
25 distributed across the site. This stand, therefore,

1 will be classified also as clearcut but in this
2 exercise would have had one of the classifications of
3 residuals shown on it.

4 Now, time is an important factor as it
5 relates to what a forester calls clearcut. Depending
6 on whether the desired species in these two areas is
7 free to grow or not, the forester at some point in time
8 stops calling them clearcut.

9 The next photo will be showing a close-up
10 of this area here. (indicating)

11 You can see that this is an area of
12 uniform residuals. This is representative of the low
13 residual classification which was used in the mapping
14 exercise. You can also see in this area natural
15 regeneration to poplar. The gray area that you see
16 here (indicating) as well as some spruce on the
17 hillside. This is a relatively rich site. This
18 poplar will have regenerated fairly quickly following
19 clearcutting due to root suckering.

20 There is also other species in here which
21 you can see in the foreground, and you can actually
22 spot them up the hillside as well. These are smaller,
23 these are jack pine that have been planted in this
24 area. Depending on the silvicultural objective for the
25 area, this area could be classified as free to grow, if

1 in fact the objective was a mixed wood. In all
2 probability, because of the effort to plant jack pine
3 in the area, they would not call it free to grow yet
4 even if the objective was a mixed stand until that jack
5 pine was taller.

6 So even though there is a substantial
7 poplar in the area that would be greater than a metre
8 tall, the forester would still be classifying this area
9 as clearcut. And this area is also part of the
10 contiguous clearcut on the maps. This is photo No. 5,
11 I am not sure if I have mentioned that.

12 MR. McNICOL: I spoke about the low
13 residual category and its usefulness to moose. Mr.
14 Greenwood has indicated that there are or there is
15 deciduous regeneration coming back here (indicating),
16 that is a food component for moose. He has also
17 indicated that conifer has been planted but as yet it
18 is not providing a cover component, so the use of the
19 food in this area is being restricted by a lack of a
20 cover component. Over time that cover component will
21 develop and increase the utilization of those sites by
22 moose.

23 DR. ABRAHAM: What is missing from this
24 photo is the conifer component, the mature conifer and
25 any species which thrive -- any wildlife species which

1 thrive in that type of site are not going to be here.

2 The species that are going to be here are
3 things like downy woodpeckers because they are cavity
4 users and producers and the birch trees here
5 (indicating) are going to provide some current cavities
6 and potential snag and cavity trees in the future.

7 The shrub layer is good so we are going
8 to have deer mice, it's relatively open, red foxes are
9 going to hunt throughout this area, short-tailed
10 weasels, and other species like that.

11 This is about five years post-harvest and
12 as this site matures into a mixed forest there is
13 potential for a large number of other species.

14 MR. GREENWOOD: This is photograph No. 6,
15 and as in the previous photographs, we are again
16 showing variation in site types.

17 The upland area in the background has
18 been cut-over and has heavy residual as this area in
19 the foreground representative of the tills, again
20 residual reflecting the original species on the site.

21 We also have an area like this
22 (indicating) which is uniform in colour and also flat,
23 representative of the outwash that we have described in
24 the previous photos, and we have a lowland area which
25 includes both standing timber and harvested timber

1 representative of the lowland organic sites.

2 Now, with respect to both the reserve
3 along this lake, which is jack pine on the outwash, and
4 this standing black spruce, the forester would consider
5 whether to map them as clearcut or not after
6 considering such factors as the shape and the size of
7 the uncut block, the proximity to existing standing
8 timber, for instance this stand is by itself, this one
9 is joined to existing timber, and the degree and
10 merchantability of the uncut patch.

11 DR. ABRAHAM: For other wildlife, I draw
12 your attention in the foreground around the lake and
13 between the lake, in the very foreground.

14 The undisturbed habitats here
15 (indicating), the undisturbed wetland area, the conifer
16 dominated riparian forest along the edge and the
17 adjacency of these things to the regenerating area here
18 (indicating) and the area with the residuals.

19 That kind -- again, without belabouring
20 it, that kind of interspersed or adjacency of
21 vegetation communities represents good features for
22 wildlife communities, and I will be speaking to some of
23 the regeneration things in a future slide.

24 MR. GREENWOOD: This is photograph No. 7.
25 It is in fact a ground shot of the regenerating jack

1 pine on the outwash that I showed in the previous
2 photograph. This area is classified as part of the
3 contiguous clearcut on the Dog River/Matawin Map 3.

4 For a forester, though, time after
5 clearcutting becomes an important factor when
6 determining at what point the clearcut stops being
7 clearcut and starts becoming a forest stand, and that
8 time of course is related to the revegetation by forest
9 species.

10 MR. McNICOL: I spoke to application of
11 the guidelines and how guidelines can be relaxed in
12 areas that do not have the capability of holding high
13 moose populations.

14 This is such a site. As Mr. Greenwood
15 explained, it's outwash sands relatively infertile that
16 will produce good jack pine but is not suitable for a
17 diversity of other species. You will see here that
18 there is a browse component, but it is primarily poplar
19 and we suspect the result of suckering from a few
20 poplar that were in the existing stands. There is not
21 diversity or abundance of other browse species on that
22 site, so it does not have the capability of holding
23 large numbers of moose.

24 THE CHAIRMAN: Mr. Greenwood, if I can
25 ask a question with respect to your last comment. For

1 the forester, he makes a decision at some point as to
2 when a clearcut ceases to be a clearcut in terms of
3 when the stand is regenerated.

4 Does he do that stand-by-stand or does he
5 do it by virtue of the area that was originally
6 clearcut? In other words, does the clearcut area to
7 the forester just reduce in size as stands regenerate
8 sufficiently so that he determines, from a forestry
9 perspective, that they are out of the clearcut, or does
10 he wait until the entire area has regenerated
11 sufficiently so that he says what was clearcut in the
12 beginning is no longer to be considered, for forestry
13 purposes, as a clearcut?

14 MR. GREENWOOD: You may remember some of
15 the earlier evidence on depletion and accrual, the
16 accrual being the point in time when a re-inventory is
17 done and the stand is entered back into an inventory.
18 It's at that time that the forester must make a
19 decision as to what goes back into the inventory.

20 At that point in time the forester has
21 the opportunity to create new stands. So in an area
22 such as this, where we had a lowland organic and a jack
23 pine, there would have most likely been two separate
24 stand boundaries there. The aerial photograph showed
25 how there is a difference in growth rate already

1 between those two sites, and the forester would most
2 likely make the decision to map out the jack pine on
3 the outwash and consider it free to grow at a point in
4 time. It may be at a point in time earlier than the
5 slower growing black spruce on the organic site, so he
6 would map out that area and consider it free to grow at
7 a later point in time.

8 So redoing the inventory or at least
9 accounting for the accruals at a number of different
10 times, he would have an opportunity to in fact put the
11 jack pine in at one point in time as a separate stand
12 and the black spruce at a later point in time as a
13 separate stand, as opposed to waiting until the total
14 area which had been harvested was free to grow.

15 THE CHAIRMAN: And what remains that he
16 hasn't put back in would still be classified as a
17 clearcut.

18 MR. GREENWOOD: Still be classified as
19 clearcut. In FRI terms that would be classified as
20 barren and scattered.

21 THE CHAIRMAN: Okay.

22 MR. GREENWOOD: And in the case of the
23 spruce, it would be classified as a spruce barren and
24 scattered.

25 DR. ABRAHAM: In a forest like this the

1 uniformity, the lower tree species diversity would be
2 an example of one of those areas where there might be
3 fewer species present in terms of wildlife, but those
4 species that are, are in relatively high densities.
5 This research on jack pine plantations in Ontario has
6 indicated that spruce grouse thrive in even-aged jack
7 pine stands slightly older than this. Nashville
8 warblers are species which do well here. At the ground
9 layer, the small mammals, species called the masked
10 shrew and snow-shoed hares as well feed on some of the
11 ground vegetation.

12 On our site visit on the 23rd of November
13 after a fresh fall of snow the mammal tracks in this
14 area were abundant, really amazing to see. So that
15 there are animals present even in this kind of a
16 uniform vegetation community.

17 MR. GREENWOOD: This is photograph No. 8.
18 It's a close up-of the jack pine in the previous
19 photograph with Mr. Kennedy indicating one year's
20 growth between here and here. (indicating)

21 With respect to your question in time and
22 when a clearcut stops being a clearcut for a forester,
23 this area, because these trees -- because they are
24 greater than a metre tall and they are not being
25 severely hindered in growth by competing vegetation,

1 would be in fact considered free to grow and,
2 therefore, even though it's shown in the contiguous
3 clearcut exercise as clearcut, a forester would be
4 mapping this out and now calling it a jack pine stand 0
5 to 20 age-class.

6 If in fact Mr. Kennedy was on his knees,
7 then this would still be considered a clearcut.
8 Knowing that he isn't, the previous year it would have
9 been very close to the free to grow point, just about
10 that metre high. So there is a good possibility that
11 just this stand will look exactly the same the previous
12 year, but because it was only about a metre tall it
13 could still be classified and would still be classified
14 as clearcut.

15 Photograph No. 9. This is immediately
16 across the road from that jack pine in the last
17 previous two photographs. So we are right at the
18 transition between that till site and the outwash site,
19 in fact the hill that you see is moving up to the
20 upland.

21 This illustrates an area showing the
22 moderate to heavy residuals as was used in the
23 classification and it also shows the natural
24 regeneration following harvesting in terms of the birch
25 and the poplar in here (indicating) and the spruce

1 mixed in.

2 For timber management purposes, this area
3 would have been classified as clearcut following
4 harvest. This area is classified as part of the
5 contiguous clearcut and, again, depending on
6 silvicultural objectives for the area, it may still be
7 classified as clearcut if the regenerating species are
8 not the desirable ones.

9 DR. ABRAHAM: In the foreground, as a
10 result of the road-building activities, there is a
11 moist soil community here (indicating), vegetation
12 consisting of cattails, probably some willow and a lot
13 of alder.

14 This kind of a site, depending on the
15 water table, would be good for migratory water fowl
16 perhaps even nesting mallards. As we move up the site
17 we get into that poplar, good shrub layer, and then the
18 reasonably closed canopy, and remember the photo is
19 taken in the winter, would provide both current and
20 potential habitat for snag species where there is
21 cavities for some mature forest species.

22 In the poplar and along the edge of the
23 wetland, we would have species like yellow warbler,
24 further up the hill we would have some species like
25 probably even ruffed grouse on a site like this, and

1 some other species.

2 MR. GREENWOOD: Just before we leave this
3 photograph I will make one more point. I had mentioned
4 how topography and topography which is more rugged
5 going through more changes in shorter areas creates a
6 situation where you get more diverse vegetation changes
7 following harvest.

8 There is an area here (indicating) which
9 does include what would seem to be some merchantable
10 timber in terms of the spruce and the poplar which has
11 been harvested in other areas, and without confirming
12 through local knowledge, I would suggest that there is
13 some factor of operabilty here in terms of this
14 hillside which has meant that this patch has been left.
15 So topography can affect that vegetation change.

16 This is photograph No. 10 and is an
17 example of clearcutting within a mixed wood stand
18 resulting in moderate to heavy residual at this
19 particular location. This area would be classified as
20 a clearcut on the basis that all merchantable timber
21 had been removed and is in fact part of the contiguous
22 clearcut for the Dog River/Matawin mapping exercise.

23 This photo is an example, in fact a very
24 typical example of productive uplands, rich sites.
25 This one particularly which has been damaged by spruce

1 budworm. You will notice a dead spruce here, a dead
2 balsam here and a number of broken stems throughout
3 this stand. (indicating)

4 Natural regeneration is taking place on
5 the stand to poplar and to spruce and in fact it would
6 take intensive management and the expenditure of a fair
7 amount of dollars to obtain satisfactory regeneration
8 to another species that wasn't regenerating naturally
9 on the site.

10 MR. McNICOL: These multi-specied open
11 canopied mixed wood stands are good moose habitat
12 before cutting and in actuality cutting these areas
13 actually improves them as moose habitat because it
14 simulates more browse production. The cover component
15 is still there, you still have that interspersion of
16 cover and food. Excellent moose habitat.

17 DR. ABRAHAM: The good mixture here of
18 tree species, four or five species present in the
19 immediate photo, the good ground cover, grasses, a lot
20 of good shrub layer in the middle here, regenerating
21 conifer and other shrubs, combined with the standing
22 dead trees, the snags, that is all equal -- or that all
23 equates to good wildlife community diversity as well.

24 Species in here. There would be a
25 variety of warblers. It's a relatively open mixed

1 forest site, so you would have white-throated sparrows,
2 probably the snags there would be several kinds of
3 woodpeckers including probably pileated woodpecker.

4 A site like this prior to harvest would
5 have had more conifer and red-backed voles would have
6 been a characteristically dominant species in a mixed
7 site like this, but here even after post-harvest or
8 after harvest red-backed voles would continue to be a
9 strong component of the small mammal community.

10 Whereas if it had been a cleared site, as
11 some that you will see, the red-backed voles would have
12 may be initially of interest then decreased and then
13 been replaced by another species. So this is a good
14 site overall for wildlife.

15 MR. GREENWOOD: Photograph No. 11. The
16 previous photo being an example of moderate to heavy
17 residual, this is an example of the low to moderate
18 residual following clearcutting and this area has been
19 also included in the contiguous clearcut and would be
20 mapped as clearcut following harvest.

21 MR. McNICOL: In contrast to the previous
22 slide, this area would only receive moderate use by
23 moose at this stage because the cover component
24 although existing here is not as extensive as it was in
25 the previous slide. Food production still good, but

1 cover is not as good as in the previous slide.

2 DR. ABRAHAM: And I would note in this
3 slide the absence of the mature conifer although I can
4 see some of it in the background, but I would also
5 bring your attention to the presence of some large
6 stemmed dead and downed material in the foreground
7 which is going to provide structure for the ground
8 living species, small mammals and some of their
9 predators, possibly even marten moving out into this
10 area to forage from the adjacent conifer.

11 MR. GREENWOOD: Photograph No. 12, and I
12 am focusing here on the area in the background as
13 opposed to the foreground which is an edge of a road
14 right-of-way.

15 This is a photograph that would
16 demonstrate a typical late succession mixed wood stand
17 that has been damaged by spruce budworm, in fact there
18 has been mortality from spruce budworm in this stand.

19 This stand has not been harvested due to
20 the lack of merchantable timber and, as such, it would
21 and could be classified as depleted by a forester,
22 depleted meaning that it could be mapped as clearcut
23 even though there had been no harvesting within it.

24 After making that judgment, the forester
25 at the time of accruals would then have to make the

1 judgment whether to enter the stand back into the
2 inventory using another canopy species - I neglected to
3 say this was a spruce stand. They may choose to use
4 another canopy species such as birch or poplar if there
5 is enough canopy stems, or he may choose to site
6 prepare the area and regenerate it artificially to a
7 desired species, or the forester may also choose to
8 enter the stand at re-inventory time as one of the
9 regenerating species in the understorey.

10 The point being, that the original spruce
11 working group would be considered depleted and this
12 area would be calculated in the total area of clearcut.

13 MR. McNICOL: Natural disturbance is
14 important for moose for habitat creation. In this
15 case, some of the cover component in the form of balsam
16 fir has been killed in the overstorey, but what that
17 has done is that it has opened up the forest floor for
18 more browse production.

19 Because the balsam -- sorry, the spruce
20 budworm did not kill all of the coniferous trees that
21 you see here (indicating), the cover component is still
22 there. So you have good interspersions of browse and
23 food, creating good moose habitat.

24 DR. ABRAHAM: This site shares similar
25 characteristics with the previous two photos 10 and 11,

1 but in this one the mature, or at least the relatively
2 large conifer is present and one species, for example,
3 which I might look for here, this is a good nesting
4 tree potentially for merlin, which is a small 'pop'
5 which inhabits this kind of forest. And recalling what
6 the site looked like over a little bit larger area, I
7 would say that something like that is a likelihood
8 rather than just a possibility.

9 MR. GREENWOOD: Photograph No. 13. This
10 photograph illustrates one of the points I made
11 earlier; and, that is, where the terrain is more rugged
12 the site conditions change over relatively small areas
13 and, therefore, the vegetation changes over relatively
14 small areas and is reflected in smaller stands or
15 stands with a lot of diversity in them.

16 Following harvesting then the pattern of
17 residual, the pattern of unmerchantable stands reflects
18 the original ruggedness of the topography and site
19 changes. So within this area we would have patches of
20 open clearcut, light to moderate residual, and
21 unmerchantable stands. The total area, however, would
22 be mapped as clearcut and is shown as part of the
23 contiguous clearcut on the maps.

24 DR. ABRAHAM: And here as -- and
25 throughout the aerials, as you will see from the ground

1 a little bit later, the undisturbed wetland community
2 along the stream here (indicating) and the general
3 patchiness of the residual and the unmerchantable
4 stands provides a good mixture of communities.

5 MR. GREENWOOD: Photograph No. 14. We
6 have now moved into what has been mapped as the single
7 block harvested in 1987/88. This is an area of open
8 clearcut shortly after harvesting then, and from the
9 forester's perspective this area would remain
10 classified as clearcut until the regeneration on the
11 stands was free to grow.

12 The lack of residuals on this site
13 reflects the, as an outwash, the relatively uniform
14 nature of the landform and, therefore, the soils that
15 are here. It also may reflect the merchantability of
16 the species that were removed; if in fact it was a
17 mixture of jack pine and poplar and poplar is utilized,
18 you would also have an open clearcut such as this.
19 (indicating)

20 There is one mistake in the witness
21 statement. The statement with this photograph said
22 that it had been site prepared and planted, in fact it
23 has been site prepared but it will be planted this
24 coming summer.

25 MR. McNICOL: Example of the open

1 clearcut. As I indicated, these areas will produce
2 food for moose, but the food in the short term that
3 will be utilized is that food that is about 200 metres
4 more or less from the edge of standing timber.

5 Once lateral vegetation -- once
6 vegetation gets to a height of about six feet, you are
7 going to have more extensive use of this site when
8 there is some lateral cover for moose but, in the
9 interim, use will be restricted to the edge.

10 DR. ABRAHAM: This site, the open
11 clearcut and the picture taken in winter, less than --
12 well, within two years of the harvest. I checked on
13 the site characteristics beforehand, it was a
14 conifer -- almost a pure conifer stand.

15 In a small mammal community, as I
16 mentioned before in an earlier slide, the red-backed
17 vole would be a dominant mouse or dominant small
18 mammal. Probably immediately after harvest on this
19 site it continued to be dominant, but because the site
20 has been mechanically site prepared, it has now
21 probably been replaced by deer mice which are another
22 family and generan -- genous of mice which do quite
23 well in this habitat because of the seed-producing
24 grasses and the low vegetation in this type of a site.

25 Also, then we would have open country

1 hunting raptors like the marsh hawk or northern harrier
2 that would capitalize on the availability of the small
3 martens here. Red foxes probably hunt throughout the
4 area, perhaps even red-tailed hawks using this area and
5 nesting in adjacent mixed forest, if such exists.

6 In the centre of slide No. 15, we have
7 one of those sites of brush and alder which was
8 undisturbed by the harvest. You see that it connects
9 to the standing mature timber in the background and
10 throughout it there are some large deciduous trees and
11 there are some small conifer trees in the foreground.

12 This site is somewhat -- the diversity
13 for wildlife somewhat depends on the water table. If
14 the water table is near the surface, if there's
15 standing water through a significant portion of the
16 summer, you would have good nesting habitat for
17 wetland-dependent species, water fowls such as mallard
18 and blue-winged teal, species of warblers which
19 inhabit that kind of area, common yellow-throat,
20 yellow warbler, perhaps even some spotted sandpipers,
21 although not likely at this site, flycatchers and some
22 of the common species like red-winged blackbirds would
23 also be characteristic of a site like this.

24 MR. GREENWOOD: This is photograph No.
25 16. It is taken immediately across the road from the

1 previous two photographs and it shows a clearcut area
2 containing open -- patches of open clearcut, patches of
3 moderate and heavy residuals and the total area would
4 be classified as a clearcut and managed for either
5 regenerating species, regenerating naturally or
6 artificially on the site.

7 DR. ABRAHAM: The richness of the site
8 that Mr. Greenwood reflected or referred to would be
9 reflected in the wildlife. You have got the
10 meadow-type habitat in the foreground, you have got
11 some mature deciduous in patches and that patchiness
12 would do well. You've also got some damage to the
13 standing trees which are going to provide snags,
14 species like blackcap chickadee which are one of the
15 most common species but still a snag-dependent species
16 would be common throughout here, some of the smaller
17 woodpeckers as well and a variety of small mammals.

18 MR. GREENWOOD: This is photograph No.
19 17. It's in the same location, just a different view
20 of the previous photograph. The mixed nature of the
21 original stand and the relatively large amount of
22 ground vegetation on the site are both indicative of a
23 rich site in terms of forest productivity. It is one
24 of those upland tills again, as described earlier.

25 MR. McNICOL: This site is better for

1 moose than the previous photo although they are very
2 close, they are only about 200 metres away. But you
3 can see the coniferous component here, mixed wood, the
4 deciduous provides a cover component that was lacking
5 200 metres away in that other photo that we just saw.

6 MR. GREENWOOD: This is part of the
7 previous site but within one of the open clearcut
8 patches and what we are indicating here is the natural
9 regeneration to poplar which is well above our heads
10 and, again, the factor of time. Depending upon the
11 silvicultural objectives for this site, specifically
12 what the desired species is, this site may be
13 classified either as clearcut if in fact -- or a poplar
14 stand from the forester's perspective. So it can
15 either be a clearcut area or a free to grow area.

16 MR. McNICOL: The fact that poplar
17 suckers from an existing root system is part of the
18 explanation for the tremendous growth that's possible
19 for this coppice. It is extremely important for moose.
20 Freshly cut areas are able to produce poplar to that
21 height in a relatively short period of time. This
22 particular site would be utilized by moose because
23 cover is just behind Mr. Greenwood to the right of the
24 photograph.

25 DR. ABRAHAM: Again, during our site

1 visit I made notes on what species or sign was present
2 and throughout this area with the poplar generation
3 there were signs of snowshoe hare and also during our
4 visit there were flocks of foraging redpolls which is a
5 species of winter finch which moved throughout the area
6 while we were there in August and finding something to
7 eat.

8 MR. GREENWOOD: This is photograph No.
9 19. This is an area which is in fact marked as part of
10 the contiguous cut on the maps. It is between two
11 areas of the single year's harvest and it demonstrates
12 nicely the comments we were making earlier about large
13 uniform site conditions which result in natural stands
14 being large in size and, therefore, the cut-over and
15 the regenerating stand follow the original stand types
16 and size. This area, or this treated clearcut will
17 remain classified again, as the other ones, as clearcut
18 until it's free to grow.

19 DR. ABRAHAM: And the point I would like
20 to make about this relatively large area in the centre
21 would be about the future forest and what that
22 relatively homogeneous forest stand or group of stands
23 would mean to a sensitive -- an area sensitive species.
24 Here you would have a relatively large homogeneous area
25 which would exist for a long period of time once it has

1 regenerated which will satisfy the needs of those
2 species.

3 MR. GREENWOOD: Photograph No. 20. I've
4 mentioned also in making the decision: What is
5 classified as clearcut, particularly when there is
6 standing timber involved, would depend partly on the
7 proximity of uncut stands to standing original forest.

8 The configuration of those stands and
9 also the degree of contiguity for both the cut and the
10 uncut areas, particularly when you start to see
11 peninsulas like this. (indicating)

12 In this photograph the entire foreground
13 would be mapped as clearcut. There would be some
14 question as to whether you would map this or not as
15 clearcut, it would depend on what the original stand
16 boundary was, whether there is still merchantable
17 timber in here or not and what the silvicultural
18 prescriptions were for the surrounding areas.

19 MR. McNICOL: This is from Map 2 for Dog
20 River/Matawin. You may remember my saying that this
21 area was in essence conifer dominated, very little
22 mixed wood in this area, no hardwood. Most of these
23 stands were conifer-dominated stands. That means that
24 there was a shortage of food in the area. The cutting
25 that has occurred obviously is going to create the

1 food. The use in the short term of these sites is
2 going to be limited to the edge of these cover areas.

3 A moose utilizing this particular
4 location hypothetically - and I have seen this in terms
5 of winter tracking - they characteristically move from
6 cover patch to cover patch across the clearcut area and
7 work food acquisition in that manner.

8 DR. ABRAHAM: And I would just echo that
9 in terms of some of the other species like red fox,
10 possibly even marten, considering that the
11 connectiveness -- that there is a connectiveness
12 between the lineal strips of conifer back to that large
13 unharvested block toward the back.

14 MR. McNICOL: I spoke, when I was
15 speaking of Dog River/Matawin Map 2, about the largest
16 open clearcut area. That is shown here. (indicating)
17 This, by the way, is slide 21, and I spoke to what
18 breaks this clearcut from this clearcut. Why would a
19 biologist assess the size of this single clearcut alone
20 and not include this with the other clearcut here.
21 (indicating)

22 Well, you can see here that there is a
23 significant break between those two clearcut areas.
24 Moose will utilize the entire edge and across this
25 area, cover-to-cover distance here, much less than 400

1 metres and the same here (indicating) and that, in
2 essence, is where you are drawing the line in terms of
3 categorizing individual clearcuts.

4 DR. ABRAHAM: The next two slides, slides
5 No. 22 which is this one, and 23, are representative
6 of -- what I would like to point out is representative
7 of them is the ground layer of vegetation including
8 grasses that would exist in open clearcuts within the
9 first few years following harvest.

10 Again, I'd ask you to note that there
11 seems to be a lot of gray in this picture, representing
12 deciduous shrub species and, again, I'd ask you to
13 imagine that with some of the green leafy material on
14 them.

15 Moving ahead to slide 23, this even more
16 structured and some generally rolling topography, a few
17 stag -- spruce and, in the foreground all that gray is
18 deciduous shrub species. And these characteristics
19 provide -- or these are the characteristics of this
20 kind of open clearcut moving from immediate
21 post-harvest condition through some of that rapid
22 regeneration that I mentioned in my presentation.

23 MR. GREENWOOD: Just before we begin a
24 description of this slide, there was another error in
25 the witness statement with respect to the description

1 of slide 22. It also described the site as having been
2 site prepared and planted. As in the previous error,
3 it has been site prepared but not planted. It also is
4 scheduled for planting this coming summer.

5 This is slide No. 24. It is a slide, a
6 close-up of a residual unmerchantable black spruce and
7 a large block. We have seen some of these from the
8 air. Unmerchantable as you can see by the small
9 diameters and the short length, height of the trees.
10 Very, very dense growth on an organic site. You can
11 just barely see Mr. McNicol in here.

12 If this block was part of an allocated
13 stand, it would be recorded as clearcut or depleted
14 even though it also had not had any form of harvesting
15 in it. And depending on its size and shape and its
16 proximity to undisturbed areas, when re-inventory time
17 comes along and it's time for accruals, it could be
18 included as part of the surrounding regenerating area
19 as a subcomponent of that stand or included with an
20 existing forest stand, if there was one adjacent to it,
21 or if it's large enough, it may even form a new forest
22 stand at that point in time.

23 MR. McNICOL: This is the residual dense
24 conifer category. When I spoke about it I spoke about
25 it in the context of cover for moose.

1 In this particular instance, this can be
2 used as lateral cover; that is, protection from winds
3 or observation by predators, but in terms of its use as
4 overhead cover, it is limited by the fact that the
5 stems are actually too numerous and too dense. Moose
6 is too large to physically negotiate this particular
7 stand; in other words, a hard time fitting in there. I
8 had a hard time fitting in there.

9 DR. ABRAHAM: Lowland black spruce like
10 this has a characteristic group of animals. During our
11 site visit there was evidence of red squirrels and
12 snowshoe hare. Summer residents, in terms of birds,
13 would be species like yellowrump warblers or ruby crown
14 kinglets, a few small insect-eating species, and also
15 some seed-eating, conifer seed-eating species like
16 crossbills and grosbeaks would exist in this forest
17 throughout the year, not just the summer.

18 MR. GREENWOOD: This is photograph No.
19 25, and it is an area of open clearcut with
20 unmerchantable spruce patches within it. Because of
21 their small size; that is, in relation to eight
22 hectares which is the size we intend to keep FRI stands
23 above and the configuration within the open clearcut
24 area in relation to existing standing undisturbed
25 timber, they will all be mapped as clearcut and be

1 included as part of the regenerating stand. If, in
2 fact, the regenerating stand is jack pine, in the
3 description they may include a small component of black
4 spruce.

5 I guess the bottom line for the forester
6 in all of these slides, the one that I would want the
7 Board to take away, is that from the timber management
8 perspective, clearcut can mean anything from an
9 undisturbed forest stand, depending on its
10 merchantability, right through various stages of
11 residual, through to open clearcut. That would be done
12 for depletion purposes which, as was explained earlier,
13 is related to the calculation of MAD.

14 MR. McNICOL: This is a demonstration or
15 could be construed as a demonstration of the shelter
16 patch technique as proposed in the Moose Habitat
17 Management Guidelines. These patches were not
18 engineered, they were left, as Mr. Greenwood indicated,
19 because they were unmerchantable but they demonstrate
20 the point.

21 Moose, again, can utilize more of this
22 clearcut area by moving from existing undisturbed cover
23 to these patches (indicating) throughout the disturbed
24 area utilizing more of the food that is available.

25 DR. ABRAHAM: And I would like to draw

1 your attention to the undisturbed riparian -- basically
2 undisturbed riparian areas here (indicating) that --
3 one that connects pieces of mature forest and, in the
4 foreground in particular, this meandering stream and
5 the alder shrub around it immediately adjacent to a
6 conifer uncut or unharvested conifer here (indicating)
7 which we will be looking at in detail in the next
8 photo.

9 This is that site from the ground looking
10 back toward the unharvested conifer. I draw your
11 attention to the flatness of the area, the relatively
12 large amount of dead, downed material here (indicating)
13 which I think results from the falling down of those
14 trees while the stand existed, not necessarily a slash
15 or a result of the harvest.

16 The flatness of the area and the
17 adjacency of the edge here (indicating) created by the
18 riparian alder and the strip of unharvested conifer are
19 the features that would provide for some species.

20 And this -- whoops, excuse me, this is
21 slide 27. And just to finish up, we have a large
22 unharvested conifer area here (indicating) which is
23 part of -- is inbetween two open clearcut areas and
24 represented on Map 2 of Dog River/Matawin area.

25 This unharvested area extends quite a

1 ways off the slide from the perspective that we see it
2 here, and this is the kind of site where we might have
3 a conifer requiring large areas requiring species, for
4 example, marten, and great gray owl.

5 And immediately adjacent, because of the
6 irregular edges of that cut and because of the
7 existence of the undisturbed riparian habitat you have
8 foraging or feeding habitat for those species.

9 So it's not just the large unharvested
10 block which represents the habitat. That is one of the
11 vegetation types that marten and great gray owls would
12 seek, but the creation of areas here (indicating) which
13 would be favourable to some other prey species, it
14 would be a positive influence on their habitat.

15 MS. MURPHY: That is the end of the
16 photographs, Mr. Chairman. I propose that we rise now,
17 and we are reconvening at nine in the morning?

18 THE CHAIRMAN: That's correct.

19 MS. MURPHY: Thank you.

20 THE CHAIRMAN: Very good. Thank you,
21 Panel.

22 ---Whereupon the hearing adjourned at 6:15 p.m., to be
23 reconvened on Wednesday, January 24th, 1990,
commencing at 9:00 a.m.

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